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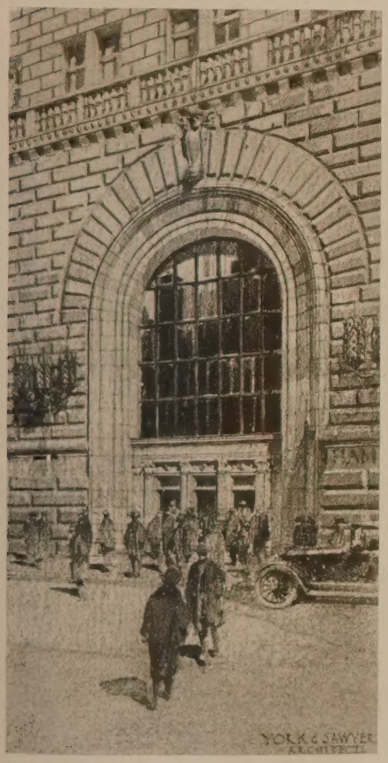
Planning the Modern Bank

By Philip Sawyer

IN 1905 the writer attempted to treat of bank planning in an article for a special bank number in the *Architectural Review*, and it is amazing to see the difference with which the subject must be approached now.

At that time it was still possible to divide such institutions into three classes (commercial banks, trust companies, and savings-banks), to consider these as either individual buildings for the purposes of the bank alone or as office-buildings, housing the bank in the lower portion of the structure, and one could assume with some assurance what the organizations would be and how they should be provided for.

In those days deposits of twenty millions meant a big bank, and the six or eight or nine hundred millions of to-day would have sounded to any banker like a fantastic dream.



Study for a bank entrance.

Since 1905 we have seen the national banks opening trust departments, the trust companies and commercial banks establishing numerous branches, and even the savings-banks maintaining branches where they are enabled to open them by taking over other savings-banks. Moreover, the growth of the larger banks has been so great that the old practice of putting practically everything in a single room, the officers overlooking the clerks and intimately connected with the working force, has become impossible, and not only is the clerical work carried up through many stories of high buildings but the principal officers are sometimes widely separated from the working force. This tendency has gone so far that it is frequently undesirable to put the officers on the main banking floor, and, especially in the narrow streets of crowded cities, they are better taken care of in an upper story; the higher above the noise, dust, and dirt of the pavements the better.

Preliminary study for a city bank. York & Sawyer, Architects.

In 1905 one could say definitely that the officers should be immediately accessible to the public, their platform placed near the main entrance of the bank; that the receiving tellers should also be close to the entrance; the loan cage next to the officers, and that the paying tellers need not be quite so accessible. Now, even these few rules are subject to more exceptions than those in a Russian grammar; and each bank has become increasingly an individual problem, each year more complicated and more difficult of practical solution.

In the old days a bank expected the architect merely to plan a building; the bank would then fit itself in as best it might. Now the bank requires the architect first to plan a proper layout in every detail and, only when this is accomplished, to design the banking-rooms and the building con-

Entrance, Brooklyn Trust Co. York & Sawyer, Architects.

taining them. This makes planning more difficult, since the scheme of design preconceived as best may not admit of the required arrangements, but it is more interesting, since once the organization and its functions are provided for, the design of a structure to fit it becomes a definite problem; the more interesting as its conditions are more rigorous.

A few years ago a banker said to his architect: "There's no use telling me of your experience in bank planning—no architect knows anything about it; you build the building and we'll move in and put the desks in place; the officers alone know how to do that." That attitude is rarer now, and bankers themselves are becoming familiar with the difficulties of making shifts where each piece of furniture is fixed within narrow limits by its telephone, lights, and bell or signal outlets; the low-tension work involving a nest of conduits embedded in the floor-fill almost as complicated as those beneath a city street. Each bank says that its requirements will involve little such work, and each year the wiring becomes more complicated.

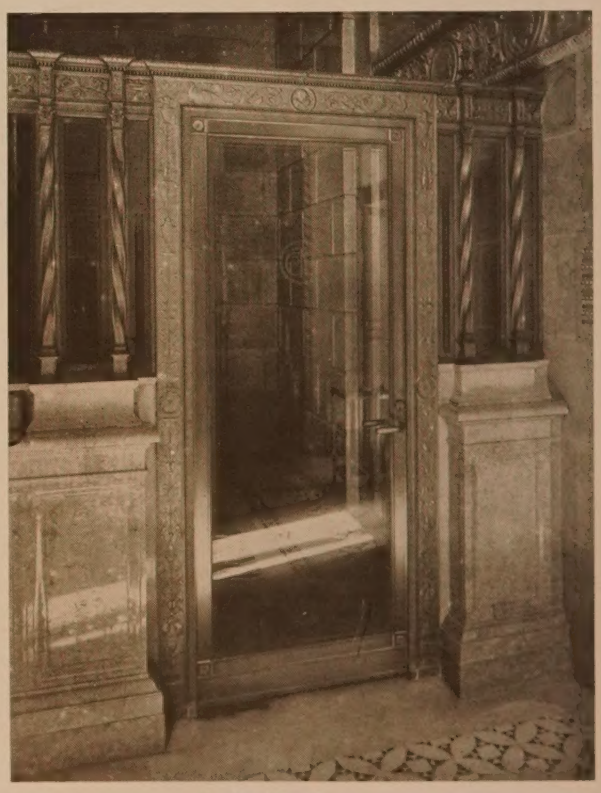
The rigidity caused by these requirements is the architect's chief difficulty. Not only must he plan for the present, or rather for the date of completion (for the bank often grows tremendously while the building goes up), but he must go as much farther forward in allowing for future growth as his imagination suggests and as his clients will allow. In twenty years we have never built one single bank big enough, and we have provided as much as two and one-half times the area already in use. Moreover, after the best estimate of, say, ten years' growth has been met, it is still wise to put the units most likely to develop apart from each other, if possible next to the divisions most readily displaced, planning everything so as to admit of such displacements with the least physical interference and expense. So important have these changes become that some of the banks maintain a large staff who do nothing but plan and carry out shifts of personnel and equipment.

In general, since the first floor and basement are always the tightest, everything which can be put below the basement (plant, etc.) should be kept out of it in the first place, and everything which does not have to be in the first floor should be placed elsewhere: vaults below, working divisions requiring slight public contact above.

In one instance where the first floor had been kept reasonably clear, the trust department was forced up-stairs before the room was started and the bond department just after, unfortunately, its quarters were finished, but still before it had moved in. In this institution the entrance-floor banking-room is now practically an officers' space with an "island" of tellers, and even the loans and discounts are about to be removed from it, which brings us to this interesting point—if a bank is so big that it is no longer possible to put it all in one room or on one floor, or even on several, and if many activities must be reached by elevator, why retain the street floor for officers other than those necessarily in immediate contact with the working force?

In a recent case it appeared that if the officers were moved up-stairs and the area gained given to working space, 80 per cent of the public could be handled on the lower three banking-room floors, while only about 5 per cent of the public, seeking access to the officers, need go higher, and they might as well go directly to the tenth floor, where the general officers could be out of the noise, dust, dirt, and heat of the streets, in a location better suited to their comfort and efficiency.

The president of one of the great down-town banks said recently that at the first opportunity he would move his officers up to the top of his fifteen-story building, where now the dining-rooms are the only quiet place for conference, since the organization has outgrown the old close contact,



Doorway in counter-screen, Brooklyn Trust Co.

ENTRANCE–GATES.

BRONZE ELEVATOR–DOORS.

York & Sawyer, Architects.

RHODE ISLAND HOSPITAL TRUST CO. BUILDING, PROVIDENCE, R. I.

terior entrances. This gives protection and is also a moral guaranty that everything is properly closed, since, if a single closure does not make contact when the switch is thrown, the gongs go off and the captain of the watch is in for an explanation.

In conclusion, the latest development in American banking is the institution so big as to require a high building, and so complicated in its organization as to make its disposition over a number of floors not only necessary but desirable.

The first decision in planning such a bank usually involves the position of the elevators, which should probably be nowhere on the entrance-floor, and in the centre of the working floors above, in order that the public and private circulations of these upper floors may be kept separate.

The entrances must provide for (*a*) public, (*b*) employees, (*c*) mail securities and bulk freight and supplies, (*d*) coal.

The vaults should probably be connected with the money-handling divisions by special elevators. Where the vaults are so large as to be placed on several floors, they can either be separate vaults superposed, separately ventilated and entered from each floor, as is intended in the case of the Federal Reserve Bank of New York, or entered only on the upper level, a coin lift and stairs within the vault giving access to lower levels, as in the New York Assay Office. Vaults should never be placed over boiler-rooms, unless more thoroughly insulated from heat than sometimes happens.

Divisions having the greatest contact with the public are best placed on the entrance-floor, the next on the second, and so on, the purpose being to keep the elevator service down to a minimum. Officers, other than those who must follow their departments, should be placed together on an upper floor, with their secretaries' rooms, conference rooms, board-room, and as liberal a number of additional unassigned rooms as the area of the building admits of. Stenographers' space, files to which officers need immediate access, and a certain amount of statistical work should be provided for in their vicinity.

The telephone central, which can be located anywhere, is preferably placed in the quiet of a remote part of the building, and the girls are entitled to a rest-room in connection with their working space.

Finally, when everything has been thought of, when each unit has been placed in proper relation to the others and due allowance made for growth, it is merely a piece of extraordinary good fortune if some newly created department, some fresh activity, is not thrust into the midst of things to dislocate one's best arrangements. No modern bank building can be successful which is not so planned that every part of its area is separately accessible, individually heated, lighted, and ventilated, and equally available either as a thoroughly protected working space or with public contact. All that one may be sure of is that a modern bank is a living, growing organism, extremely sensitive to general conditions in this country and in the world, to every change in the banking system or the new laws which may at any time modify its procedure, and that any shell, intended to house it, will be satisfactory only in proportion as it allows of the easiest modifications of practice and arrangement.

The Problem of Administration in Bank-Building

By Charles E. Myers
Of Abell, Smalley & Myers

IT is recorded somewhere that in the building of King Solomon's temple, at a critical stage in the finishing of the work, loud outcries were heard because of the lack of proper drawings on the trestle-boards.

Although the tradition is not clear as to the character of the missing designs, we believe that they had to do with the furnishing of the temple rather than with its construction. It is known that the structural and architectural elements were substantially completed, the various walls, rooms, and exits, or gates, being in place. This is clearly indicated by the mention of watchmen, who, even in this day, are employed when a building nears completion, to keep out the curious, whether they be critical fellow craftsmen, idle slaves of business, or prying interlopers, such as reporters and photographers. The idea of guarding the exits then, as now, was, without doubt, founded on a desire not to be distracted at a critical moment, when the allotment of space and the placing of the furnishings (equipment) could no longer be avoided. Hence the outcries now, as then, because of the lack of certain "designs."

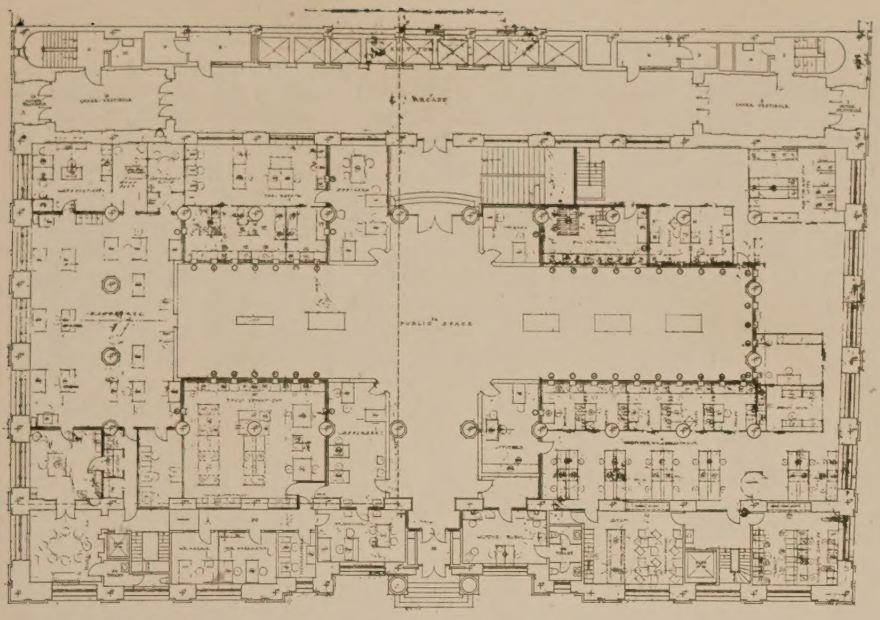
Our belief is thus strengthened that the practice of specializing in equipment, or what is now sometimes called "equipment engineering," had its beginning far back in history, and we may safely assume that the desirability of planning in advance for the equipment of the temples of those days was recognized.

Perhaps even in that early time the risk of depending upon the free (*sic*) advice of itinerant peddlers, "sales engineers," and "contracting designers" was known and avoided by using, instead, experienced professional talent. Indeed, it must have been so, else why the trestle-boards? But why, then, the loud outcries? The explanation is simple: the equipment specialist employed on the temple work had been called to refreshment by the master architect, a practice seldom imitated in modern times. Perhaps the missing designs were even then at the blue-printer's, as is often the case now, and the outcries proceeded, of course, from the hirelings of the "general contractor," who have not changed their habits in all these centuries, and whose moans to this day are never stilled.

However faulty may be our attempt to recall the past, the fact is that the desirability of employing specialists for the allotment of space and the design of equipment has been recognized for the last ten years, prior to which time their value was utilized mainly by manufacturers of equipment for increasing the sale and use of their product. The specialist had not appreciated his opportunity, and was only dimly conscious of the conflict involved in attempting to serve two masters.

Since 1910 the value of the services of the equipment specialist has come to be more generally recognized, and it is due in a large measure to his own efforts that he has demonstrated the worth of his services.

There is a tendency to call this person an "equipment



First-floor equipment plan, Rhode Island Hospital Trust Co., Providence, R. I. York & Sawyer, Architects. Abell, Smalley & Myers, Equipment Specialists.

engineer," but the fact is that he does not graduate from any school except that of experience; that he does not study his methods from any text-book except that of daily life, and that there is no university to grant him a degree. He has learned his profession in the field, and has graduated from the ranks of the industry, the products of which are, in part, the expression of his practical skill. He has had experience in the administrative routine of modern business, and his work is to plan an arrangement of space for the efficient transaction of business and to specify the business man's tools.

While his usefulness is increased by a sufficient comprehension of architecture to enable him to understand the architect's purpose, he may be limited in his field at the pleasure of the architect, who may prefer to design furniture for special rooms in which the artistic quality predominates. Nor is he a purchasing agent, although contracts for equipment are let upon his drawings and specifications, and his advice is valued in placing contracts.

Guided by his special experience, logical in his methods, earning by his attention to practical details and by his loyal co-operation the good-will of architect and client, he works within the special field which is his own, supplementing the knowledge of architect and owner, furnishing the information upon which both can agree and depend.

The equipment engineer gathers his data for a proposed plan from the same sources as the architect but from a different angle. With him it is not so much a question of areas as of the number of people who will be required, the work they will perform, and the tools with which they work. His units are these employees, each with his individual provision of desk, machine, counter, or cage.

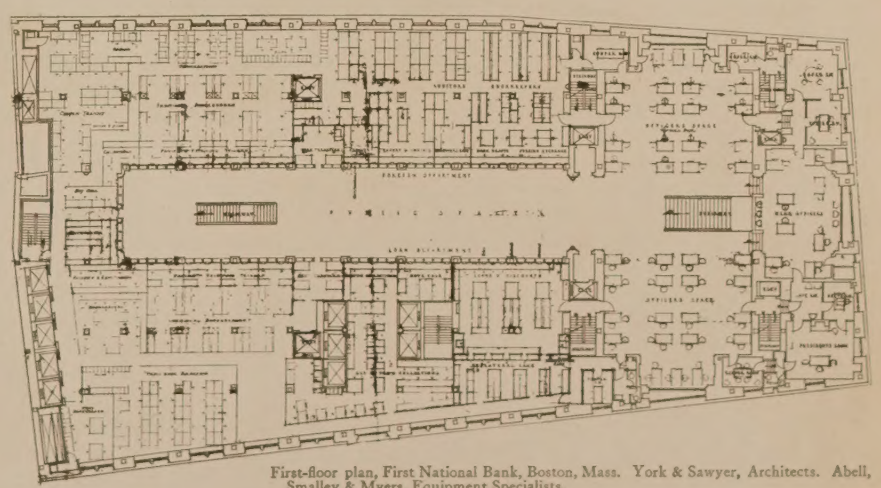
His usefulness in the early development of a plan depends upon the facility with which he can gather information, the accuracy with which he forecasts the probable development of the various activities, and the clearness with which he interprets for the use of the architect the contradicting or conflicting considerations which present themselves in dealing with the administrative work of a modern business. He works closely with the architect, co-operating with him, analyzing the problems which the architect must decide.

The allotment of space having been satisfactorily determined, the architects are enabled to proceed with their plans, confident that the practical utilization of the areas is assured, since the plans are based upon the detailed requirements for the conduct of business, as well as upon the structural and architectural elements of design.

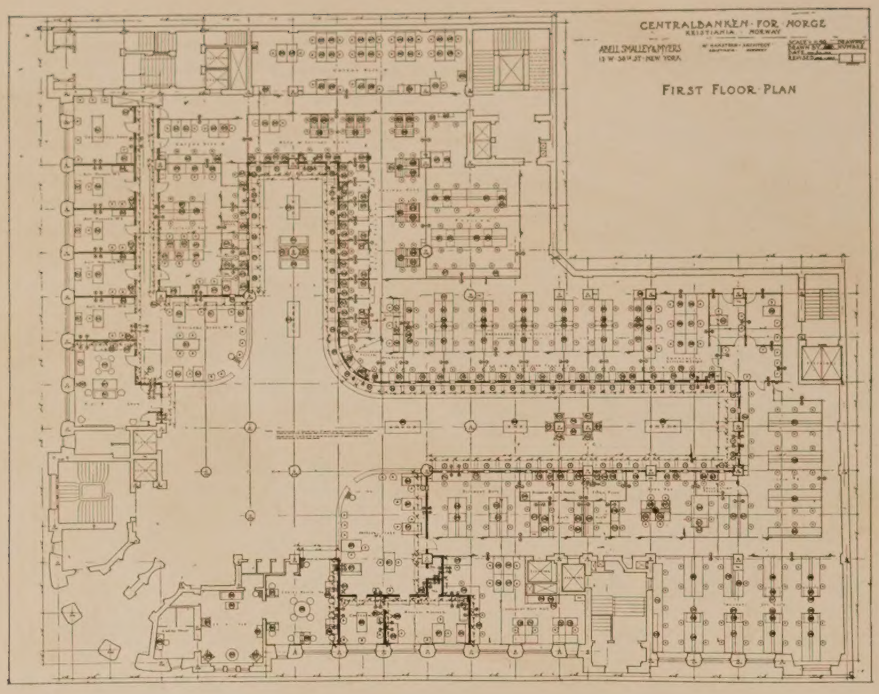
Following the architect's plans, diagrams are then made which show the location of each piece of equipment, whether fixed or portable. Each article is identified by a number, and an accompanying schedule tells exactly what it is, of what material it is made, and by whom it is to be provided. Such portions of the owner's equipment as it may be his desire to retain in use are shown in the same way, together with any alterations which may be required to permit its installation with the new work.

The use of this schedule permits the classification of the equipment into as many manufacturing lines as will result in securing bids from the sources of original supply, eliminating practically all intermediary handling. The saving effected by bringing the manufacturer and consumer directly together on all important items amounts to a considerable sum, which accrues to the benefit of the owner.

The engineer prepares detail drawings and specifications, showing the construction of all new equipment and the alterations to the old, together with such data as will give a clear conception of the problem of its fabrication and installation. These drawings are carefully worked out and the details of construction so shown as not only to insure a good product but to reduce the chances of error on



First-floor plan, First National Bank, Boston, Mass. York & Sawyer, Architects. Abell, Smalley & Myers, Equipment Specialists.



the part of the prospective bidders in figuring the costs upon which their prices are based. This eliminates the contingent sums often included in proposals, because of the lack of definite knowledge of the requirements, and it insures low prices.

If the bids, when received, prove to be in excess of the amount set aside in the budget to cover equipment, the work may then be revised. The practice of requiring bidders, in submitting their proposals, to state unit prices for each item in the equipment permits of eliminations or additions without affording the contractors the opportunity to take advantage of such changes at the owner's expense. The cost of most "extras" is in a measure determined in advance and a definite control established, so that when an item is eliminated the amount of the contract is reduced not only by the cost of the item but by the amount figured as profit upon it.

During the time that the equipment is in process of fabrication inspections are made with two definite objects in view: one, perhaps the less important, is to insure that the "intent" of the specifications and drawings is being followed and that the work is not being scamped; the other, and with reputable contractors the more important effect of the inspection, is to insure that the work is being fabricated in a manner to meet the conditions that will prevail at the time of its installation, and to make certain that the items first required on the job have priority.

When the installation of the equipment is begun, the personal attention of the equipment specialists and their assistants serves to relieve the owners, as well as the architects, from an immense amount of annoyance. Comprehending fully the locations and the installation conditions affecting each piece of the equipment, its assembly on the job proceeds smoothly, without conflict with other trades, and without hindrance to the early completion of the project.

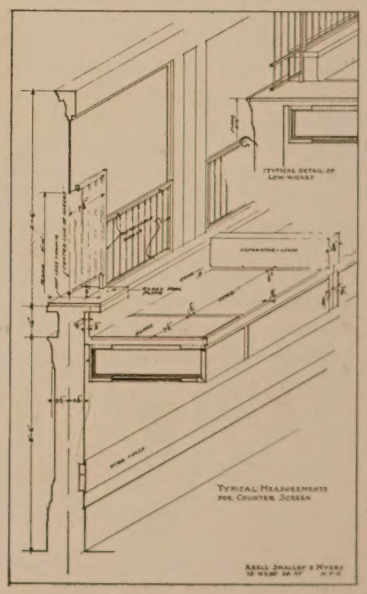
The removal from the owner's old quarters to the new is also handled in a manner not to interfere with the conduct of business, and the transition from the old to the new working quarters is carried on smoothly, quietly, and economically.

When the activities have been transferred to the new quarters, and all of the equipment is in its proper place, there is still opportunity for the manifestation of the "cussedness" of inanimate objects, and the equipment specialist is not relieved of his responsibility until these manifestations have been successfully overcome—typewriters attached to their desks, refractory locks and other "gadjets" properly adjusted.

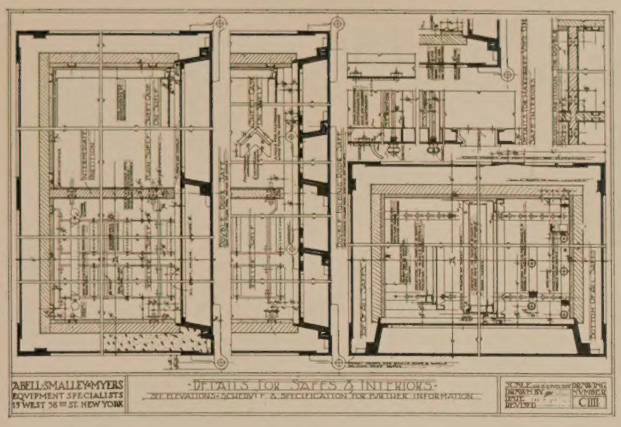
There are many items in connection with the equipping of a large administrative staff in which the equipment specialist is interested professionally rather than financially. He is frequently called into consultation by others employed upon the work, such as the electrical and ventilation engineers. The location of the equipment affects in some measure the location of ventilation registers and ducts, and the electrical engineer depends, to a considerable extent, upon the specialist's analysis of present and future conditions for the location of electric outlets for lighting, low-tension wiring, and telephone circuits.

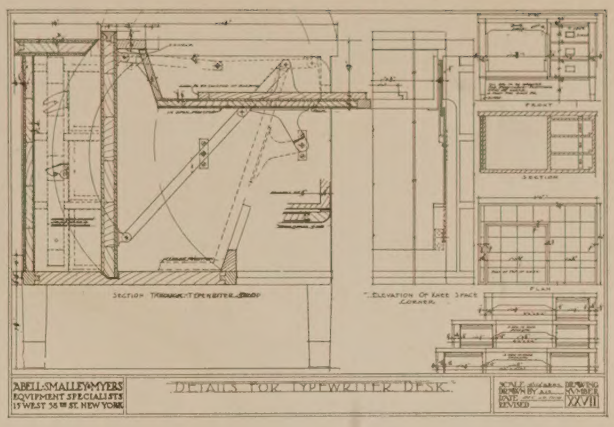
The combination of all of these elements constitutes what is known as "equipment engineering," and the extent to which the value of this new profession is recognized is indicated by the fact that the services of American equipment specialists have been recently utilized by architects and owners in Europe and in South America.

Both owner and architect profit by the skill of the specialist in arranging equipment advantageously to occupy the minimum floor space. In a recent operation an analysis of a client's needs resulted in a saving of twenty-five per cent of the area which had been previously set aside for the accommodation of the staff, releasing for revenue purposes an additional floor in the contemplated building. This added revenue would have paid the specialist's fee many times.



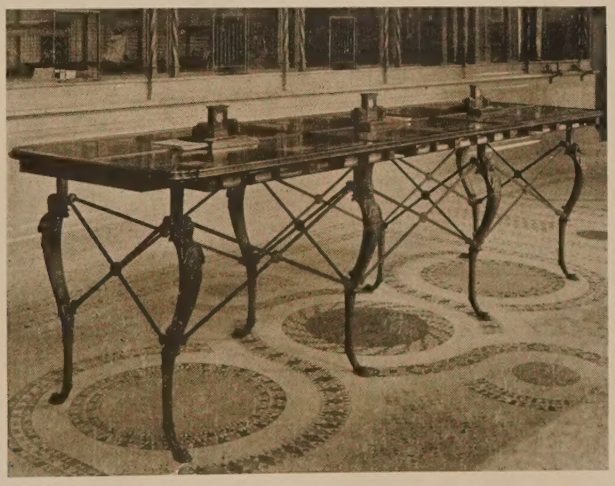
As against the old method of buying, the employment of a specialist results in equipment being secured on a known competitive basis, and without any capitalization of the so-called "selling points" invented for the obfuscation of the casual buyer. The less reliable venders of administrative equipment do not approve the employment of an equipment specialist, because it requires accurate figuring on their part and





close competition. The specialist, by eliminating the less competent and by the restriction of bids to reputable houses, insures a dependable product at a minimum cost. The middleman's profit is practically eliminated, and equipment either in large or small quantities is secured oftentimes at better than wholesale rates. Secret commissions, collusive bids, and substitutions are not employed when an equipment specialist is known to be on the job, because bidders have learned that a clear conscience and a sharp pencil avail more in securing the approval of the specialist than the hot air of former days.

The value and importance of conservation of space and the protection of the owner's pocketbook are not the only services rendered by the equipment specialist which warrants his employment. The careful attention given to the arrangement and relation of departments is, after all, of the greater value. Upon the efficiency with which these elements are adjusted depend the convenience and economical daily functioning of the staff. Any executive or subordinate will recognize the truth of the statement that cheap equipment poorly arranged is false economy. An administrative staff correctly located, adequately equipped, discharges its duties speedily, effectively, and economically. These results are a chief consideration, and to their accomplishment the equipment specialist devotes his undivided attention.



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The LeBrun Scholarship Award

THE jury in the LeBrun Scholarship Competition for 1920–21, conducted by the New York Chapter A. I. A., has made the following awards:

Travelling Scholar, Oliver Reagan, New York City.
First Honorable Mention, Robbins L. Conn, New York City.
Second Honorable Mention, Edward S. Lacosta, New York City.
Third Honorable Mention, Charles J. Irwin, Brooklyn, N. Y.

The following men, whose names are given alphabetically, were mentioned by the jury for the excellence of their work: Howard Stanley Atkinson, Philadelphia, Pa.; John S. Burrell, New York City; Louis Fentnor, New York City; J. Harold Geisel, Philadelphia, Pa.; Owen L. Gowman, New York City; Carl W. Lason, Boston, Mass.; Benjamin Moscowitz, New York City; John G. Schuhmann, New York City; Edgar F. Stoeckel, New York City.

Forty-one sets of drawings were presented, representing thirteen States, widely distributed throughout the country.

The committee consisted of Charles Butler, Ernest Greene, R. H. Hunt, William M. Kendall, and Louis Ayres, chairman.

EXTERIOR.

ENTRANCE DETAIL.

DETAIL, BANKING-ROOM. Childs & Smith, Architects.

FIRST NATIONAL BANK, APPLETON, WIS.

Editorial and Other Comment

The Modern Bank Building

THE business of banking has grown tremendously in recent years, and many of the older institutions have completely outgrown their quarters. The need for new and time-saving methods of business has called forth from the architects their best endeavors in planning and put them to the test, also of using every foot of space to the best advantage. Banks that used to employ hundreds now have thousands on their pay-roll, and every minute of time wasted by reason of poor planning that obstructs fluency in the coordination of departments is money lost. The addition of new branches of business is one that should be anticipated in new construction, as well as the best possible adjustment for the facile and expeditious conduct of present details. The problem is constantly presenting new aspects, and the cost of building has added the necessity for additional care for every possible adjustment to fill present and future needs. In this number are presented a number of typical banks, large and small, with some exceptionally interesting comment by authorities on the construction of banks in general, on the problem of smaller branch banks, and some facts in regard to the marked differences between American and European ways of doing business. The bank building in its large aspects has something of a monumental character, and there are exceptional opportunities open to the architect in the way of design. In these days of high cost, when the conditions warrant it, there is a tendency to make the bank building a part of a general office-building that will return a handsome rental profit on the investment.

Tax Exemption

IT will be interesting to see what will be the effect of New York City's ordinance exempting new buildings to be used as dwellings from taxation to the extent of five thousand dollars for each unit. It has had the encouragement of a number of prominent builders and it is asserted that savings-banks and insurance companies will make loans for such purposes. If it proves effective in stimulating home-building, it will be a welcome temporary measure at least, but there are questions regarding the future effect of such exemptions that are well worth seriously considering. We can only hope that such a measure may be so safeguarded that there will be no opportunity for unscrupulous speculators to profit at the ultimate expense of the already much-harried city-dweller. If the privilege is only going to give further opportunities for rent profiteering, the ultimate result can be foreseen. If it leads to the building of homes and apartments of moderate costs and the rentals are based on those existing in buildings without the tax exemption, we shall no doubt hear from several back counties. Far be it from us to imply any wish for paternalism in the conduct of business—we have had too much already—but if the tax-exemption builder accepts special privileges he should be ready to give the public the benefit of his share in the privilege awarded.

For the Man Who Builds Now

IN an interesting summary of present conditions the *American Contractor* has some pertinent things to say in reply to the question involved in the title of this editorial. In the last analysis the problem centres in confidence in the country's innate stability. It brings to mind the old adage about foresight being better than hindsight, and that it is better to be near the head of the parade than a mere tail-ender.

"It pays to analyze the future possibilities in store for the ones who are building now. The builder of an apartment at the present time has in store the possibility that in the future other men may obtain the materials and labor service similar to his present use at reduced figures. He has to pay a good per cent on the money he uses. What does he look to for return? He looks to the fact that the demand for housing is greater than the supply and that in accordance with this fact rentals are high. He looks to the fact that even if a building programme of considerable proportions be prosecuted, there would still be a shortage for a considerable period of time, and he banks on good returns throughout this period.

"There are two possible terminations of his profitable income. One is that there be so big a boom in building that the market be really flooded. Against the possibility of this is stacked the limited number of trained men and the limitations of existing contracting organization, and the present period of hesitancy. The other is that there be an absolute cutting off of the ability of tenants to pay high rents. This possibility is only possible if there is a long-drawn period of unemployment, low wages, and general hard times.

"In short, the man who builds now banks on the future. He banks on the inherent stability of the country and upon the inertia of his competitors. A man who so banks is in a much safer position if his work is being done now than if he comes in with the bigger class which is always second at the table."

New Jersey and the Office of State Architect

A BILL has been introduced before the Legislature of New Jersey abolishing the office of State Architect and the Department of Architecture, and transferring the powers of this office to the Department of Institutions and Agencies. The object is to afford a wider choice in the selection of architects for particular buildings, and to enable the authorities to have the privilege of calling upon the profession in general for plans for particular types of buildings; in other words, to take advantage of the work of architects who have established reputations in designing institutional

buildings of a particular type. The following statement makes the purpose of the bill clear in detail:

(1) The aim of this bill is to enable the State to secure modern practical types of building construction and to place responsibility for determining the types of buildings and type of construction for State institutions upon the Department of Institutions and Agencies. This responsibility is now divided between the several boards of managers, the State Board of Control, and the State Architect. (2) The costly conflict of authority and responsibility incurs delay in the construction of the State institutions, a prolific waste of public funds, and has resulted in the building of inefficient, inadequate, and impractical types of institutional construction. Ordinarily and presumptively in the future the greater part of the building construction work of the State will be institutional buildings. The Governor's recommended budget for the next year carries a total for new construction of institutional buildings of $950,000,000. Modernizing the present inefficient and inadequate types of construction, planning and constructing new buildings to meet the requirements for the proper modern methods of hospital care and institutional treatment at a minimum cost requires that the plans and specifications for alteration and for new construction of institutional buildings shall be prepared under the supervision of the Department of Institutions and Agencies, which department is responsible for the development and proper administration of the State institutions. (3) The transfer of authority to the Department of Institutions and Agencies will permit the department to have proper plans and specifications prepared so that there may be the widest competition in bidding and consequently lower construction costs. (4) Adequate and effective inspection will be possible at a much lower cost when the authority and responsibility for the institutional construction work is definitely placed in accordance with the provisions of the act, and conflict of opinions and authority thereby eliminated. (5) The State board may in its discretion employ any of the employees of the Department of Architecture.

Electricity in the House

THERE is nothing that better makes for economy in household conduct in these days of servantless homes than an up-to-date electrical equipment. No architect should overlook this fact in designing the new house, and it should be his duty to keep himself fully informed regarding new time and labor saving devices. Future needs in the way of sufficient and rightly placed outlets for electrical appliances as well as adequate lighting should be an essential part in all planning. Too often the lack of foresight in this has meant the later intrusion of unsightly and expensive wiring methods, offensive alike to the architect and householder. The electrical dishwasher and family washing-machine are said to be almost the standards for the proper conduct of life in many of the new California houses.

The Art Students' League of New York—Annual Competition for Scholarships

A SCHOLARSHIP competition open to all art students in the United States, with the exception of those in New York City, will be held at the Art Students' League of New York on March 25, 1921.

Ten scholarships will be awarded to that work showing the greatest promise. Work in any medium, from Life, the Antique, Landscape, Etching, Portrait, Illustration, Composition, also photographs of Sculpture, may be submitted. All work should be forwarded so as to reach the league not later than March 19, and must be sent with return express or parcel-post charges prepaid.

Students entering for this competition are urged to send the most comprehensive exhibition possible, to facilitate the work of the jury. It will be readily understood that the work covering the widest field of art expression will best enable the jury to judge of the individuality and promise of the prospective student. The league wishes to emphasize that the jury will be guided in making their awards, not by the degree of proficiency displayed by the applicants, but by an effort to find interesting individuals whose strength the league desires to add to its own.

The scholarships so given will entitle the holder to free tuition in any two classes of the league during the season of 1921–1922, or in the classes of the Woodstock Summer School of Landscape and Figure Painting for the season of 1921. The jury will consist of the following instructors of the league:

George B. Bridgman, A. Stirling Calder, Arthur Crisp, Guy Pene Du Bois, Frank B. Du Mond, Andrew Dasburg, Thomas Fogarty, Fred W. Goudy, Robert Henri, Leo Lentelli, George Luks, Wallace Morgan, Kenneth H. Miller, Edward Penfield, Charles Rosen, Boardman Robinson, John Sloan, Max Weber, Mahonri Young.

All students interested are cordially invited to enter this competition. Address all letters and packages: For Scholarship Competition, Art Students' League of New York, 215 West 57th Street, New York City.

Book Reviews

THE ENGLISH VILLAGE CHURCH EXTERIORS AND INTERIORS. By ALFRED HOPKINS. William Helburn, Inc., Publishers, 418 Madison Avenue, New York.

No one who travels in England forgets the charm of the village churches; they are a centre of architectural interest, and their great variety of form and detail a veritable mine of suggestion. The little parish church has been always the centre of community life and a source of local pride.

There is but a rill of text here as an introduction, with comment on the special features of some specially noteworthy churches, but the real value of the book is in the many excellent plates, showing churches in Berkshire, Gloucestershire, Oxfordshire, Warwickshire, Wiltshire, Buckinghamshire. In looking over these prints one cannot help thinking how much charm is added to the general composition, flavor of antiquity, and established usage by the churchyards, with their moss-grown monuments.

NOTE.—In the notice of "A Book of Ceilings," by George Richardson, last month, we omitted to state that the photolithographic reprint of this famous work bore the imprint of William Helburn, Inc.

MODERN MOVEMENTS IN PAINTING. By CHARLES MARRIOTT. Universal Art Library. Charles Scribner's Sons, Publishers, New York.

"Painting is, after all, a traditional craft, and its conventions, though they may be abused by authority or made sterile by inferior talent, are in the long run based upon common-sense."

This sentence from the author's chapter on "Naturalism" seems to sum up his own attitude toward the various manifestations in modern art that he analyzes with so much sanity and understanding.

He speaks of Constable as one of the great Naturalists, and of Naturalism as "the mother of Impressionism." "It might be very well claimed that Naturalism—and particularly the refinement of Naturalism that we call Impressionism—discouraged the direct action of design."

He aptly compares the attitude of the Barbizon school in painting to the work of the English lake poets; "the Barbizon men were both Naturalists and Romantics." The chapters on Impressionism are especially lucid and interesting.

There is a chapter given to Whistler, who he says gave an entirely new turn to English Impressionism. Whistler was of no country in his art, but a cosmopolitan. "It is more than probable, if you want to get down to the root of the matter, that cosmopolitanism, as Whistler exhibited it and Mr. Sargent does not, is precisely the reason why this great country (America) has not yet found national expression in painting."

Cézanne, Gauguin, and Van Gogh are the three leaders in the reaction from Impressionism, and from them we have gone down in a natural retrogression to such things as are called Post-Impressionism, Cubism, Expressionism, Futurism, Verticism, and all the other modern isms that confront us and fill us with wonder, not to say disgust.

But we cannot ignore these things, unless we are blind, and if they have any meaning or significance we are glad to have it pointed out in terms we can understand. This is what Mr. Marriott has done. We like the fine sanity with which he approaches the whole subject of the artist and his work.

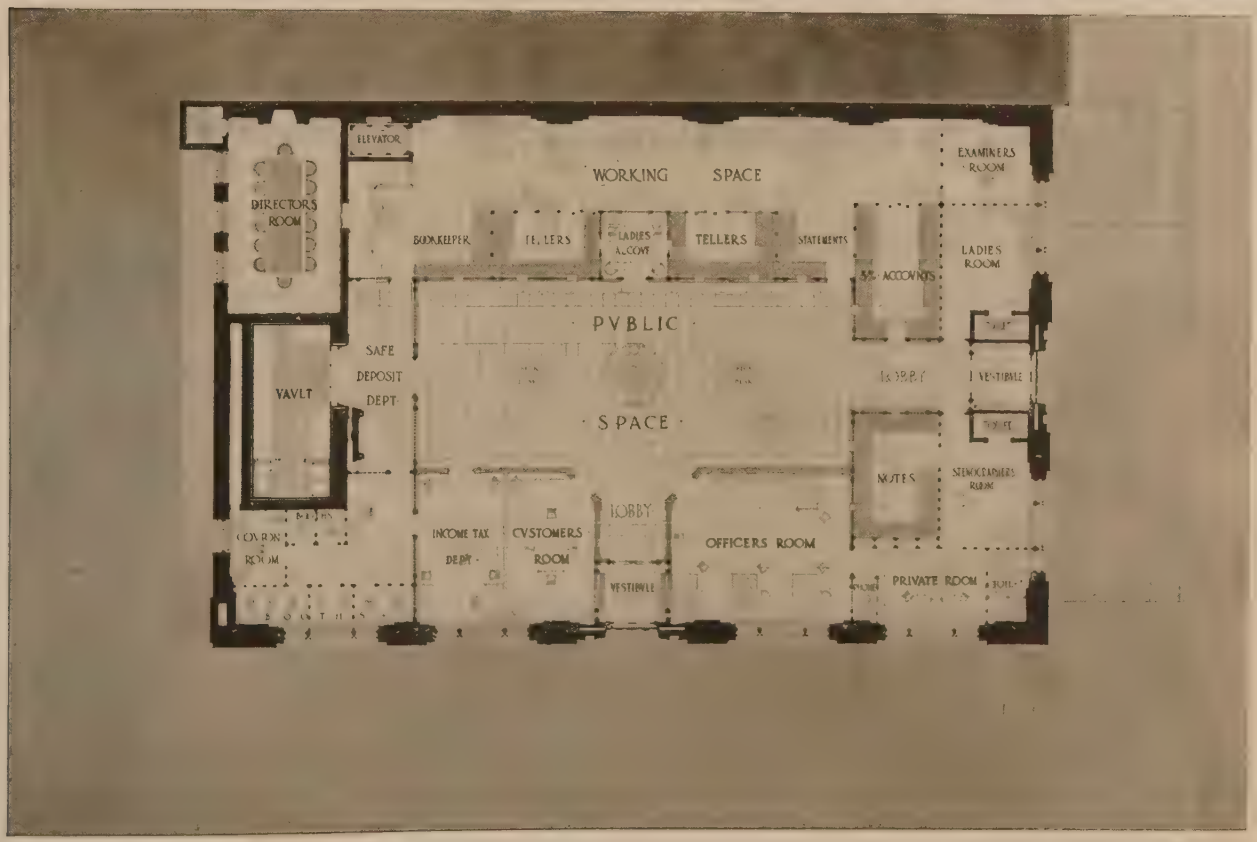
"The view of art that is taken in these pages, then, is one that conceives of the artist as a being pretty much like the rest of us, except as subject to the conditions of his particular craft. He is very much more of an ordinary man and very much more definitely a craftsman than he is commonly considered—particularly by writers on art. Most of the mental and emotional characteristics that are supposed to be peculiar to the artist—imagination, invention, susceptibility to natural beauty, sense of color, and so on—are in fact shared and often in high degree by thousands of people who, so far as it is possible to judge, have no artistic talent at all; and, on the other hand, a high degree of artistic talent of a definite kind is often found in persons deficient in the qualities that are supposed to be artistic."

The second half of the book is made up of a descriptive catalogue, with illustrations of the work of all of the chief figures in the modern movements, beginning with Constable, Turner, Gainsborough, Corot, Manet, Monet, Renoir, Cézanne, and including exponents of all the isms that have achieved notoriety.

FIRST NATIONAL BANK, NEENAH, WIS.

Childs & Smith, Architects.

BANKING-ROOM, FIRST NATIONAL BANK, NEENAH, WIS. Childs & Smith, Architects.



THE TRENTON BANKING COMPANY, TRENTON, N. J. Dennison & Hirons, Architects.

MAIN ENTRANCE.

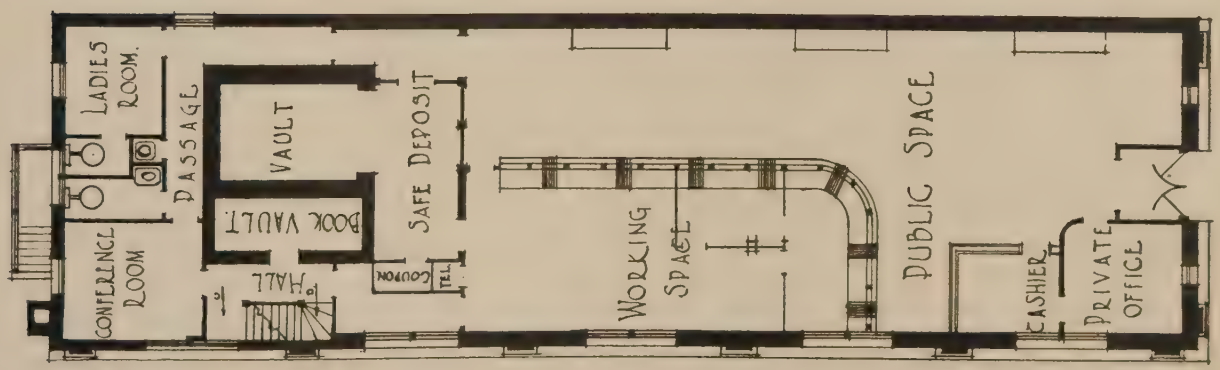
BANKING–ROOM.

THE TRENTON BANKING COMPANY, TRENTON, N. J.

Dennison & Hirons, Architects.

THE BROAD STREET NATIONAL BANK, PHILADELPHIA, PA.

Paul A. Davis, 3d, Architect.



THE CITIZENS NATIONAL BANK, COVINGTON, VA. Alfred C. Bossom, Architect.

CORN EXCHANGE BANK, BRANCH, 311 LENOX AVENUE, NEW YORK.
S. Edson Gage, Architect.

CORN EXCHANGE BANK, BRANCH, 12 WEST 28th STREET, NEW YORK.
S. Edson Gage, Architect.

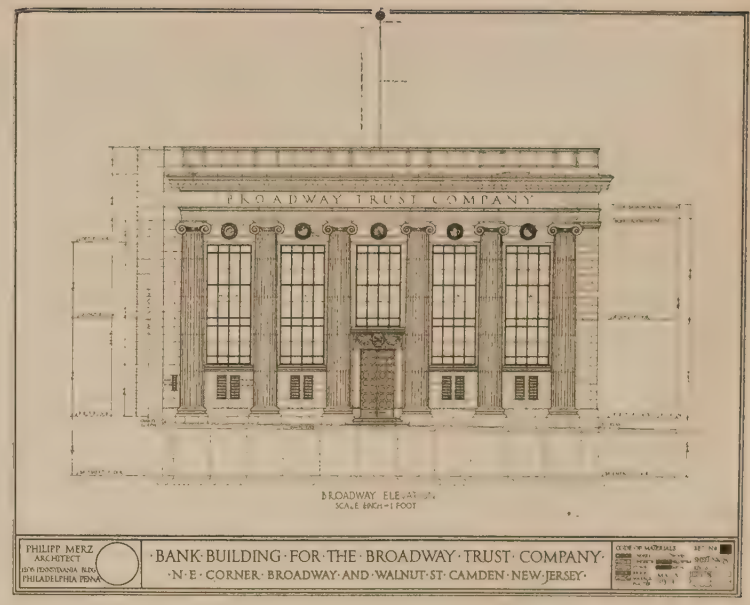
EXTERIOR.

BANKING-ROOM.

FIRST NATIONAL BANK, BRUNSWICK, MAINE

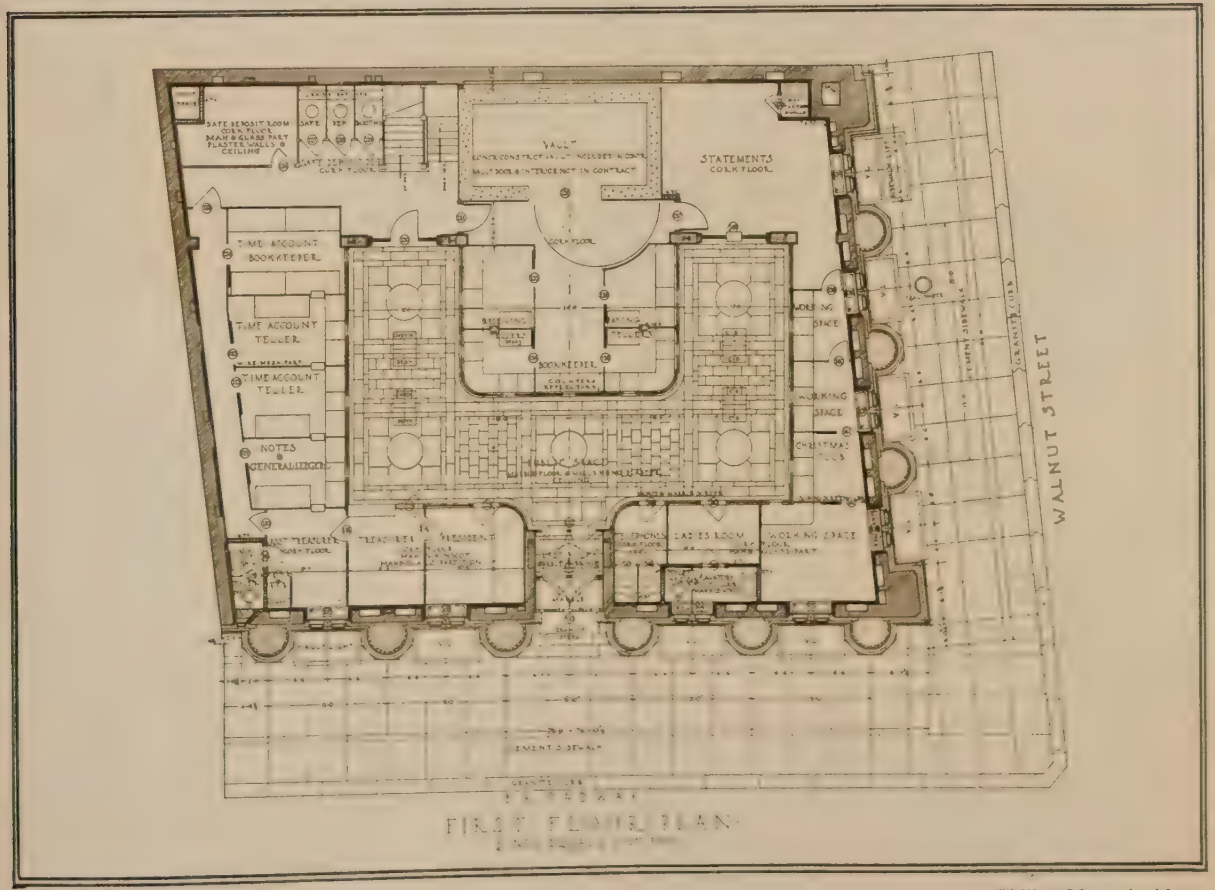
Allen & Collens, Architects.

BROADWAY TRUST COMPANY BUILDING, CAMDEN, N. J.



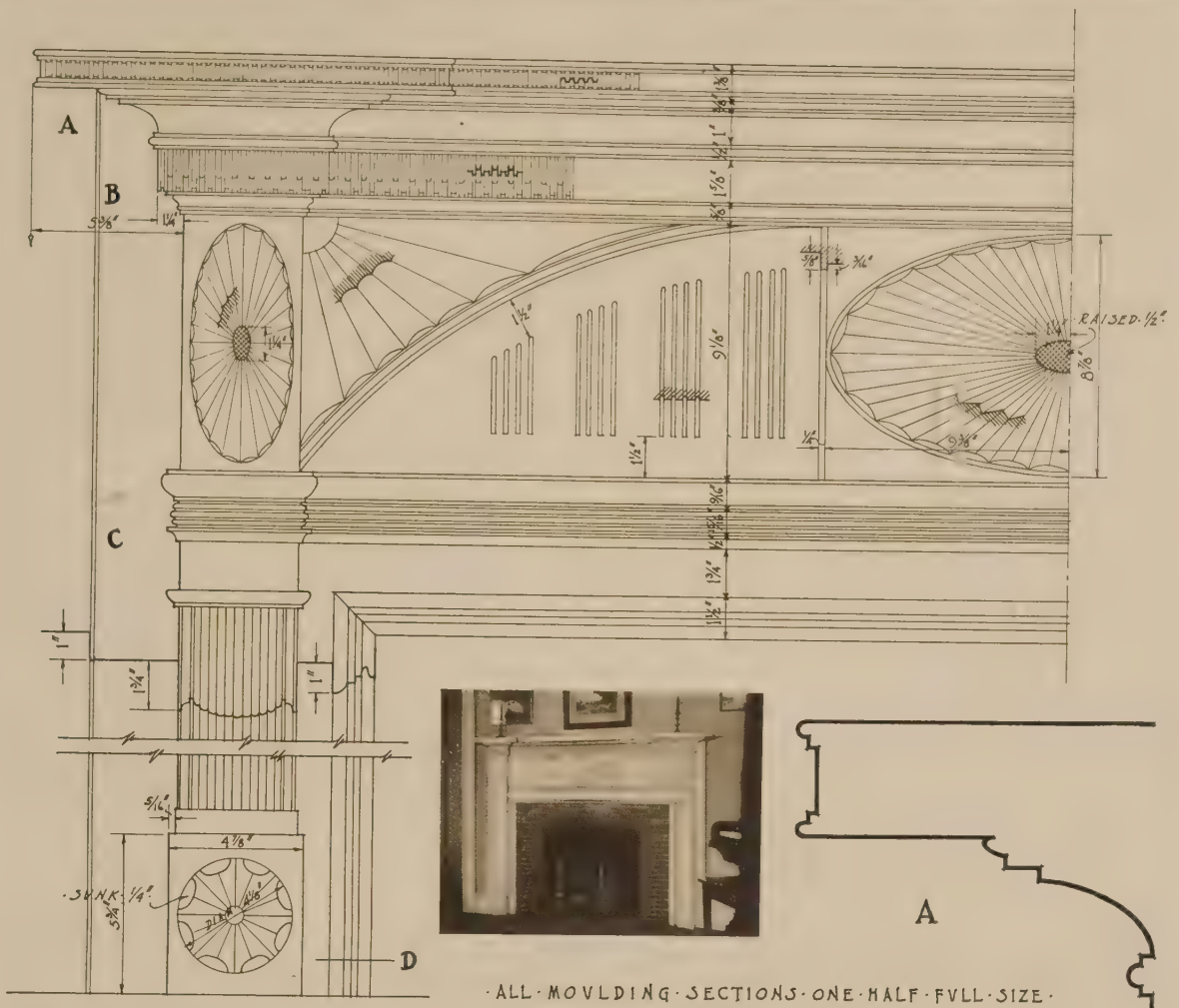
BOARD-ROOM. Philipp Merz, Architect.

BANKING-ROOM.



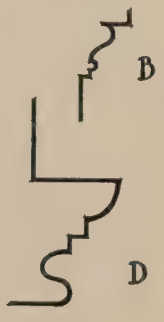
BROADWAY TRUST COMPANY BUILDING, CAMDEN, N. J. Philipp Merz, Architect.

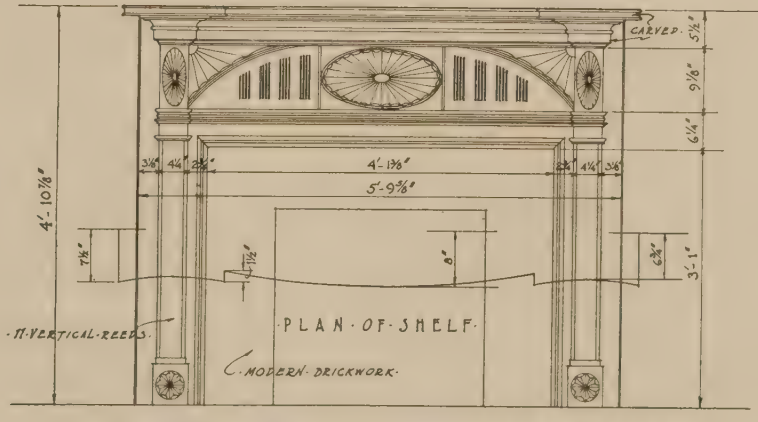

EAST ELEVATION OF PARAPET WALL OF MAIN PORTICO
SOUTH ELEVATION OF PARAPET WALL OF MAIN PORTICO
NORTH ELEVATION OF PARAPET WALL OF MAIN PORTICO
NORTH PHILADELPHIA TRUST COMPANY
ALL METAL TO BE BRONZE
¾ INCH SCALE DETAIL OF FLAGPOLE FINIAL
LIMESTONE
GRANITE
ELEVATION OF OUTER VESTIBULE DOOR
OLD FOUNDATION
NEW FOUNDATION
BASEMENT FLOOR
GERMANTOWN AVENUE ELEVATION
SCALE ¼ INCH EQUALS 1 FOOT
ADDITIONS & ALTERATIONS TO THE NORTH PHILADELPHIA TRUST COMPANY BUILDING
BROAD STREET-GERMANTOWN AVENUE-AIRDRIE STREET
PHILADELPHIA PENNA
PHILIPP MERZ ARCHITECT
1205 PENNSYLVANIA BLDG
PHILADELPHIA PA
CODE OF MATERIALS
SHEET 6



ALL MOULDING SECTIONS ONE HALF FULL SIZE

TWO INCH SCALE DETAIL OF MANTEL



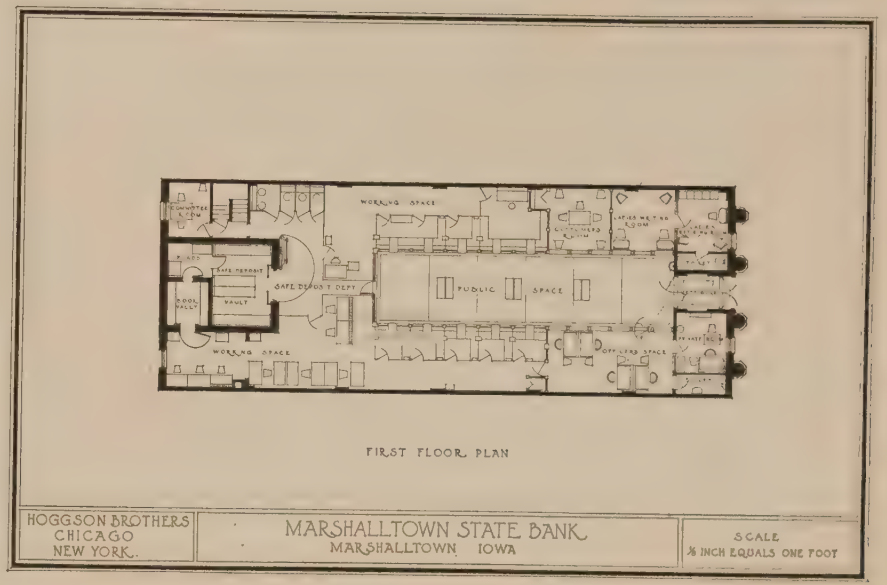


ONE HALF INCH SCALE ELEVATION OF MANTEL

EARLY ARCHITECTURE OF CONNECTICUT	MANTEL in the PARLOR of an OLD HOUSE at 86 BROADWAY NEW HAVEN CONNECTICUT	MEASURED BY J. FREDERICK KELLY DRAWN BY LORENZO HAMILTON

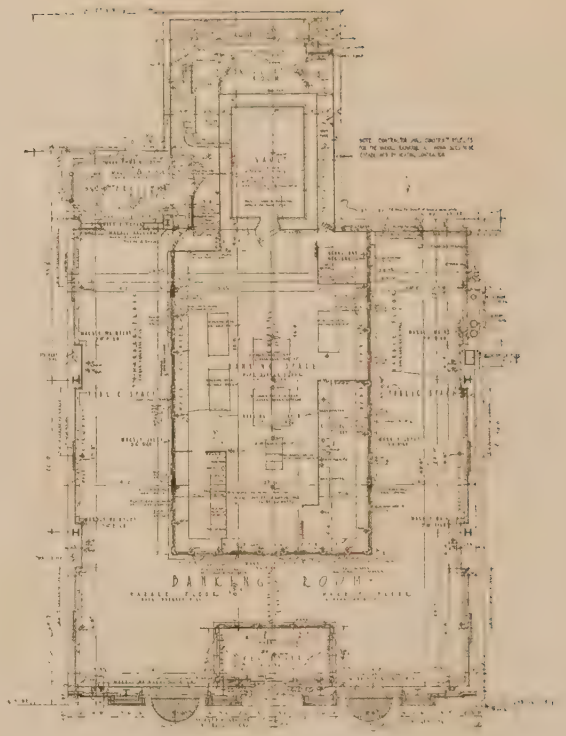
STATE BANK, MARSHALLTOWN, IOWA.

BANKING–ROOM.

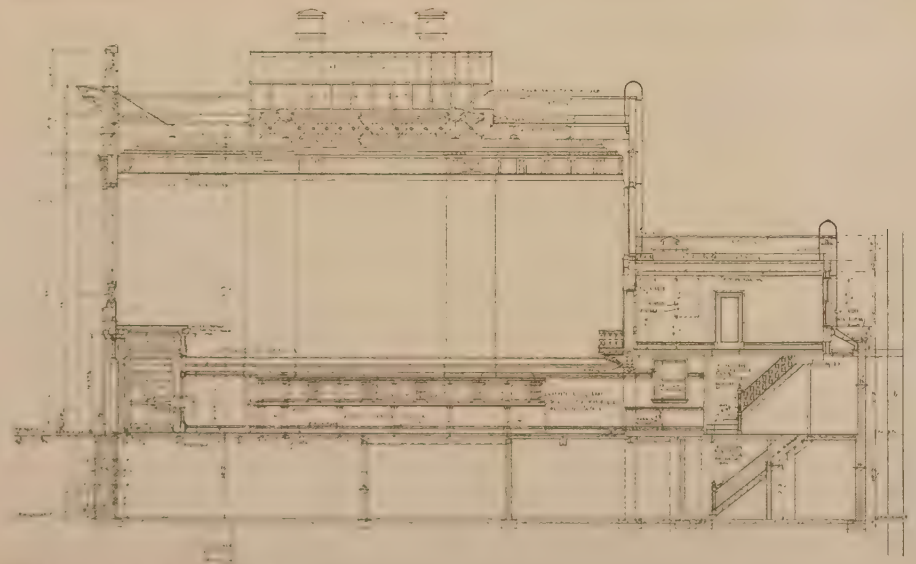


FIRST FLOOR PLAN

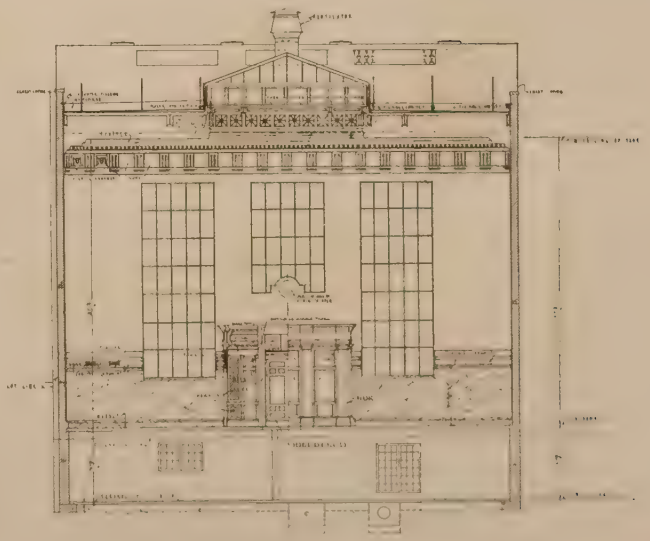
BANKING–ROOM.



PLAN, BANKING FLOOR.



LONGITUDINAL SECTION.

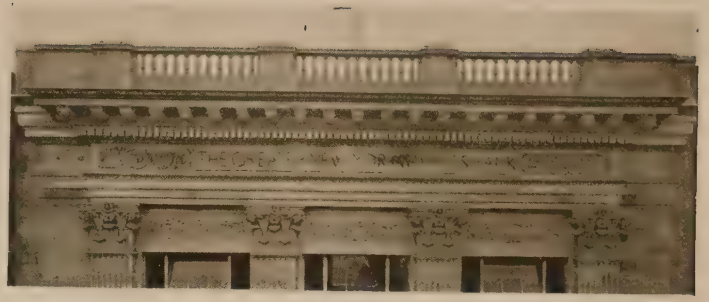


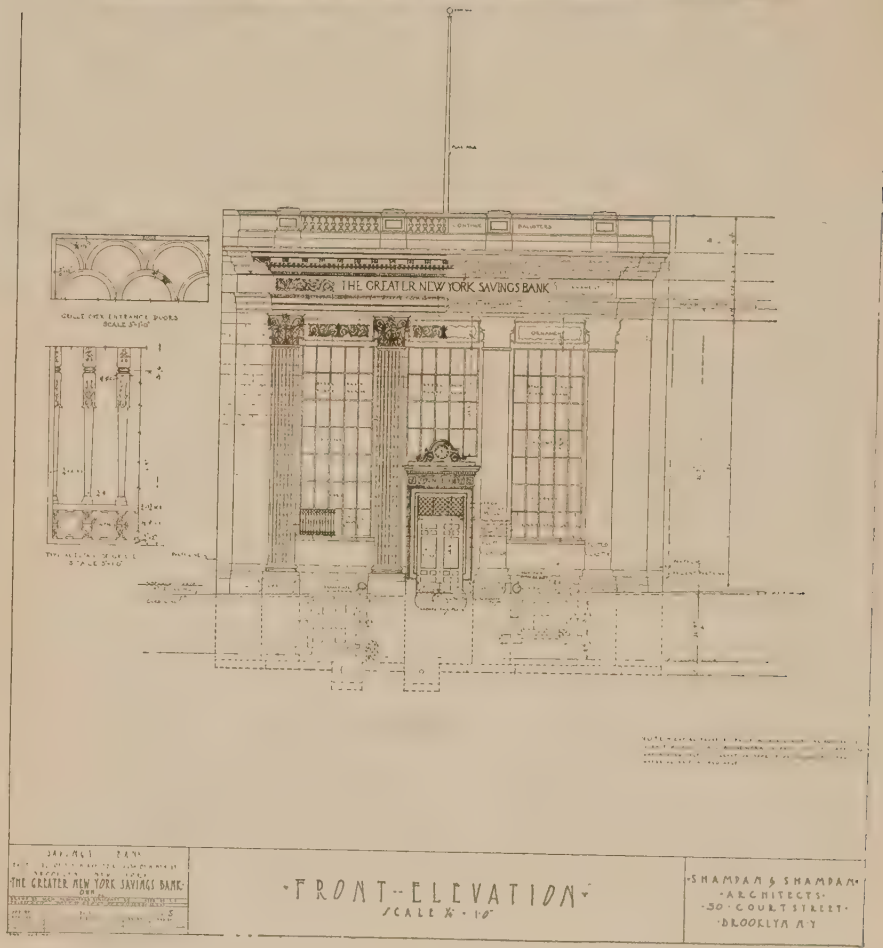
TRANSVERSE SECTION.

Shampan & Shampan, Architects.

GREATER NEW YORK SAVINGS BANK, BROOKLYN, N. Y.

GREATER NEW YORK SAVINGS BANK, BROOKLYN, N. Y.





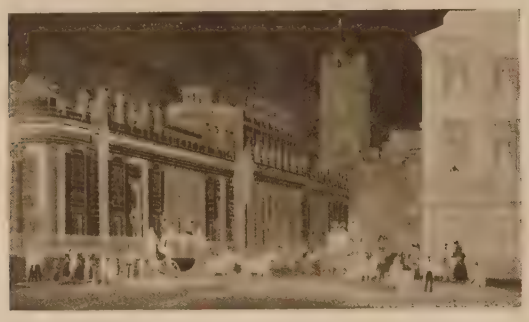
Shampan & Shampan, Architects.

The English and French Banks

By Alfred C. Bossom

I VISITED this summer every one of the larger banks in London and Paris with the hope that I might find some fresh ideas that could be adopted to make our banks more efficient or enable us to reduce the cost. All of these considerations are very much in the minds of many bankers just now, particularly those who need a new building.

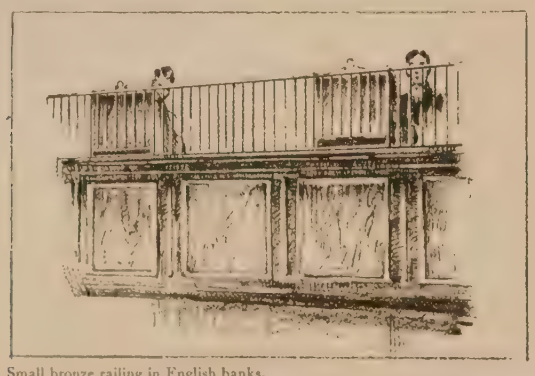
One very conspicuous condition impressed me everywhere in England, and that was the abnormal amount of time the bankers wasted in their efforts to be polite. The rapid-fire methods that we use are certainly not popular over there; but for real service and practical help the American banker is an entirely different being to his colleague across the ocean.



Bank of England.

Usually the English banks are housed in antiquated and mid-Victorian buildings, structures that do not convey the impression that they were intended to be banking-houses in any way whatever. None of them have had much money expended upon them, to judge from the American standards, but the façade in the majority of cases showed a large amount of what we shall term meaningless carving, but which, of course, cannot be attributed to the present-day architects, but rather to the Victorian practitioners.

Internally is the utmost simplicity. The general layout in practically every case is the reverse of our latest theory for banking-room design. The bank's working force is in the centre of the room under a skylight, working at huge desks upon huge books that appear to be large enough to require a small crane to move them. The counter is made of wood and has no protection above it except a small bronze railing about 18 inches high. There is a little sentry-box in front of each teller, about 2 feet 6 inches wide, consisting of a desk with a glass protection around it, so that the visitor cannot see the actual counting of money; but as regards hindrance to a thief jumping over into the bank's space no protection whatever is provided. Marble or bronze was not to be seen in a single one of the banks. In America we do everything to make the visit of the customer to the bank as pleasant as possible, but in England there is little consideration given to the convenience of the waiting public. The employees have a top light over their working space, but around the lobby surrounding the bank's employees there is often little or no light at all, and as for seats, there are none. The check-desk arrangements are, to say the least, somewhat primitive, although the shelf in front of the counter-screen is always wide, so that it is possible to sign a check (if you have a fountain-pen with you) on the counter while waiting to receive the attention of the teller.

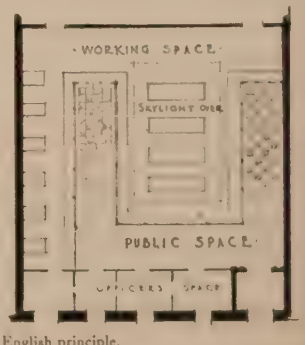


Small bronze railing in English banks.

Interior, Guaranty Trust Co., London.

We do not seem to think a bank is equipped without one of those huge burglar and fireproof vaults, but in England I did not see one of them. They were very conspicuous by their absence. There may be some vaults with circular doors, but I could not find any.

The general wall treatment was perfectly plain plaster in practically every banking-room that I visited. Paint, without enrichment, had been applied to this, and, of course, although the war had prevented much renovation during the last five or six years, it appeared as though it had been many years before that when any effort at renovating or plastering had been attempted. The rooms rather impressed you as being large, rather barnlike places, without the slightest pretense at

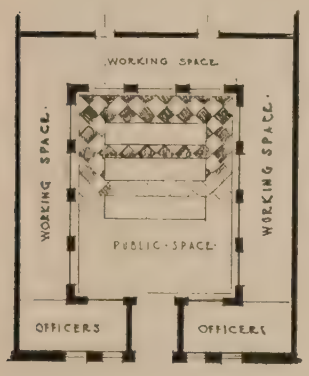


English principle.

architectural treatment; just commercial rooms in which banking transactions were carried on.

The private rooms for the bank were usually up-stairs, though in some cases they extend across the lobby and quite in the dark, lit only by artificial light from the general tellers. The floors were practically all of wood, though some had linoleum upon them.

In France an entirely different disposition was made of the employees and the customers. The entire centre of the room was given up to the customers, and large tables that looked as though they were intended for dining purposes, with chairs or benches beside them, occupied all of this space. The impression the visitor obtained was that these were intended for customers to use when answering correspondence which might have no relation whatever to the bank's business. The bank's employees always surrounded the walls and worked there all day long by artificial light. The central portion of the building, being top lit, was for the customers only.



French principle.

The bustle or activity that is always associated with the American banking-house is entirely absent. The buildings in most cases had been created into banks, and not originally built for that purpose.

The French vault idea is quite the opposite to ours. They believe in having a great number of small safes in an ordinary room; in very marked contrast to our idea of having a very strong room with comparatively large safes inside it. In one case in particular, the head office of one of the largest banks in France, the top of the vault consisted of sidewalk lights which could have been very conveniently broken into with an ordinary sledge-hammer, but apparently it is not customary to break into banks in France, and the officials don't seem to worry at all on that account.

The general banking-rooms were more or less plain; not quite as plain as those in England, but they were at the best treated with a little plaster enrichment and some paint, marble or bronze practically never being used, except a little in the floors, and this very seldom.

My conclusions are that we have created a very marked fashion of the very handsome bank building here. These old countries have been doing banking business for centuries, handling transactions that have in their time staggered the world of finance by their magnitude, without any of the expensive setting that we have developed and assumed as necessary. Of course the temperament of the different peoples has had a lot to do with this, and to-day the advertising value of the fine bank building is an item which no self-respecting banker tries to avoid, but in Europe it seems to be the one thing he tries to get away from.


Interior of French bank.

Of course in the British possessions, like Canada, American ideas are slowly making their way and the English banks are coming around to advertising in a way that a few years ago was quite unknown.

In the final analysis, the impression that is left on one is that we have created a very efficient banking-house machine, one that accomplishes its purposes with far greater expedition than by the Old World slow processes. They are still fighting very hard to hold their place, but there is very little from their point of view which we can take and adapt to our requirements.

Branch Banks

By Harold Jewett Cook

ALTHOUGH successfully operated in New York City, Cleveland, and Detroit for a number of years, branch banks are comparatively new in the city of Buffalo.

While the first branch bank was opened early in 1916 by the Bankers Trust Company, it was not until 1919 that the advantage of such a system was really recognized and the great banking institutions reached out for community business. Then there was a sudden rush for permits, locations, and buildings, with the result that now the Marine Trust Company has eighteen branches, the Citizens Commercial Trust Company five branches, the Liberty Bank three branches, and the Fidelity Trust Company one branch (in preparation). Aside from these, numerous separate national, State, and private banks were organized and are now operating. To George F. Rand must be given much credit for the development of the idea. After being convinced of its practicability, probably through numerous visits to Canadian banks, he committed his power, foresight, and energy to the project, with the result that banks were opened up in all sections of the city.

A branch bank has a peculiar advantage in that it gives the depositor the privilege of "corner store" service, together with the vast resources and safety of a large institution.

It has the personal touch of a small bank. The manager

Fillmore Avenue Branch, Marine Trust Co., Buffalo, N. Y. Harold Jewett Cook, Architect.

Banking-room, Fillmore Avenue Branch, Marine Trust Co., Buffalo, N. Y.

Genesee Street Branch, Citizens Commercial Trust Co., Buffalo, N. Y. Harold Jewett Cook, Architect.

Banking-room, Genesee Street Branch, Citizens Commercial Trust Co., Buffalo, N. Y.

South Park Branch, Citizens Commercial Trust Co., Buffalo, N. Y. Harold Jewett Cook, Architect.

Banking-room, South Park Branch, Citizens Commercial Trust Co., Buffalo, N. Y.

soon knows practically every person entering his branch, and can accord them a neighborly welcome. He becomes the financial factor of the neighborhood. Troubles are brought to him for adjustment. He knows from contact with the merchant whether his business is good, and whether the merchant is worthy of credit or not. This is vital to successful banking, because it may mean a prosperous merchant who recognizes his indebtedness, and who will not only be a continual customer but will influence other profitable accounts.

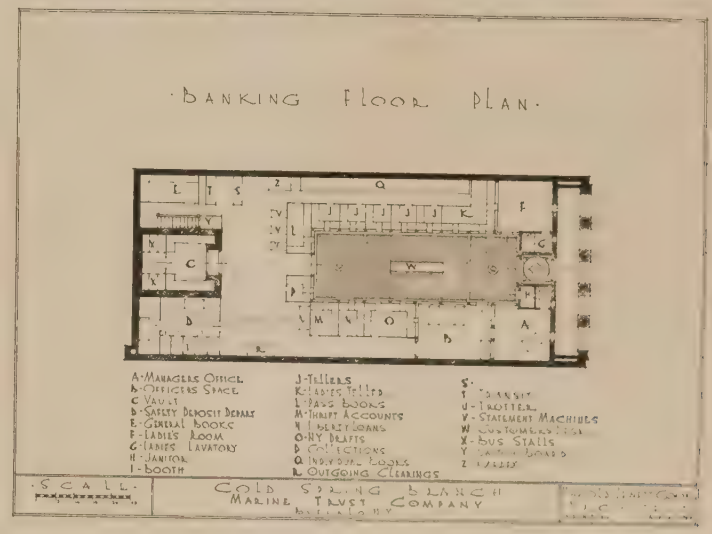
In every locality where a branch has been opened there is a notable improvement in all business, and particularly in the immediate vicinity of the bank. Property values and rentals have increased, due to the prevalent feeling of the permanency and stability of a bank.

One of the phenomena of the system is that within a period of say six months several hundred thousand dollars seem to find themselves within the coffers of the newly opened bank. A considerable portion of this is what may be termed "mattress," "teapot," "sock" money—good cash —sometimes frayed, old and dirty, but nevertheless legal tender.

Undoubtedly part of the success of branch banking has been due to the fact that they are open Saturday evenings. This is convenient to the depositor. The near-by merchant

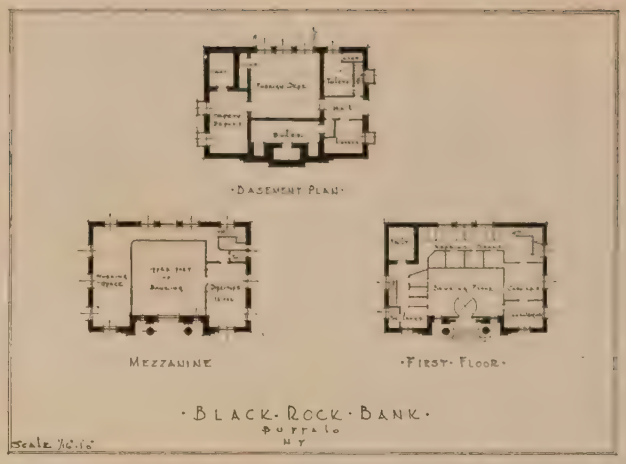
COLD SPRING BRANCH, MARINE TRUST COMPANY, BUFFALO, N. Y.

BANKING–ROOM.



Harold Jewett Cook, Architect.

Entrance, Black Rock Branch, Citizens Commercial Trust Co., Buffalo, N. Y.



Mann & Cook, Architects.

gains accordingly because of the people going to the bank each Saturday night.

The opportunity of depositing a portion of pay will induce an individual to save money and make him acquire habits of thrift.

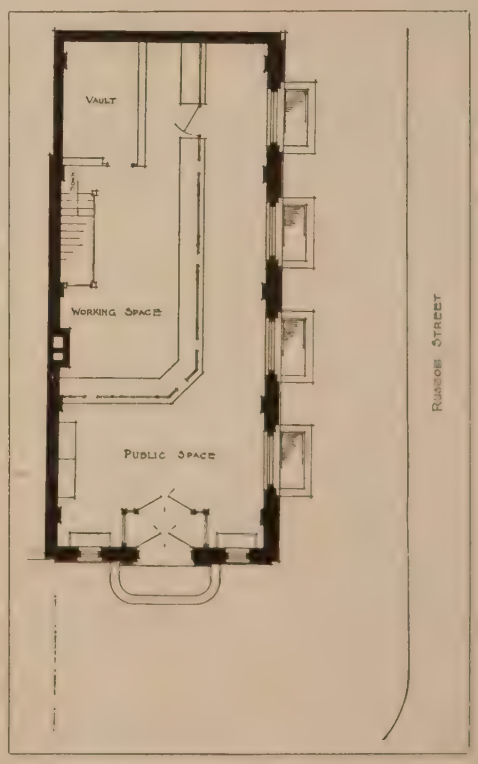
Quite notable is the number of accounts opened by persons who have not had previous banking experience.

Perhaps a word about arrangements and equipment may be pertinent. Standardized equipment is always used so that combinations and shifts may be made without inconvenience. In leased quarters there is no permanent vault, but is otherwise a complete bank. Desk work and fixtures are always of the best type to insure efficiency.

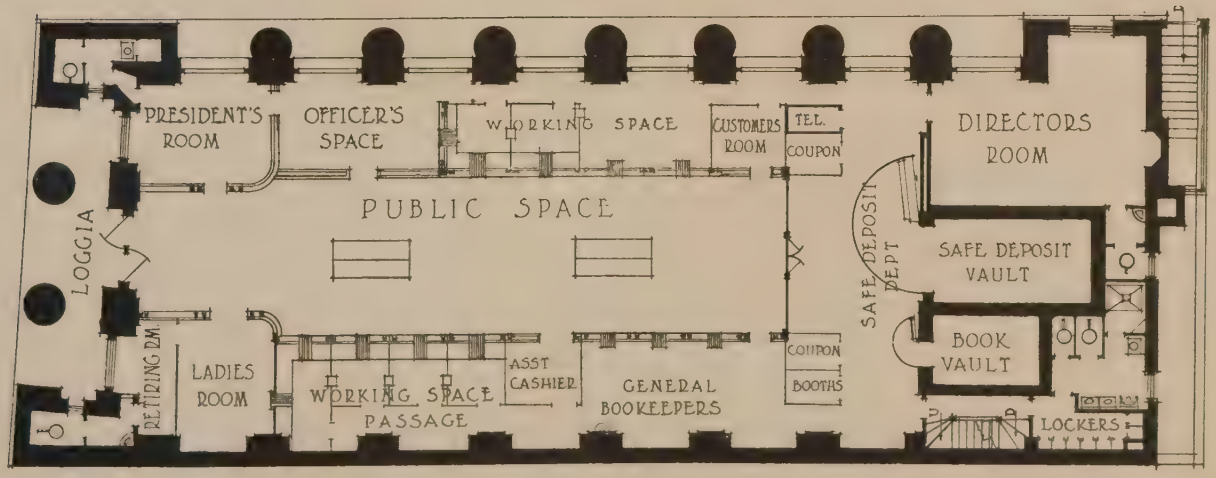
Advantages to the parent bank are obvious. Increased accounts and wider friendships belong to the institution having successful branches. The idea will continue and grow because it affords points of contact in the many communities of the city between the small depositor and the administration of the head office. This means the stimulation of thrift and resultant prosperity to the community at large.

Banking-Room, Black Rock Branch, Citizens Commercial Trust Co., Buffalo, N. Y. Mann & Cook, Architects.

Logan Office of Germantown Trust Company, Philadelphia, Pa.

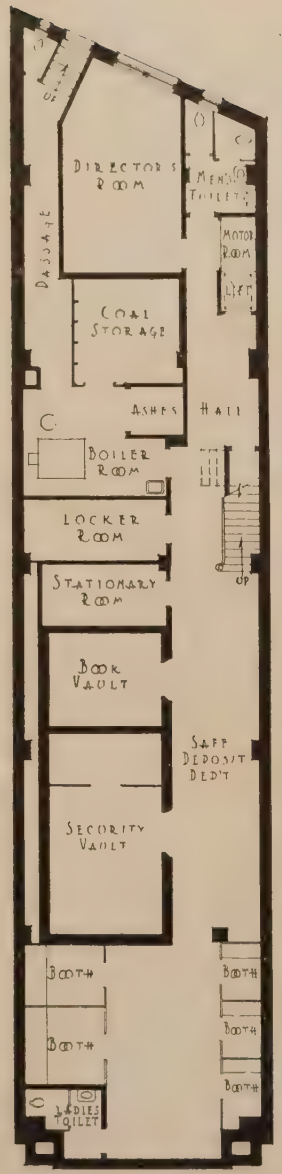


Arthur H. Brockie, Architect.

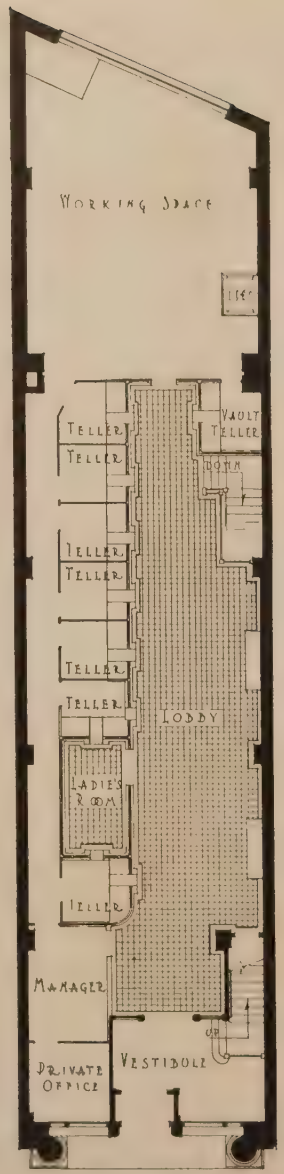


CHARLOTTE NATIONAL BANK, CHARLOTTE, N. C. Alfred C. Bossom, Architect.

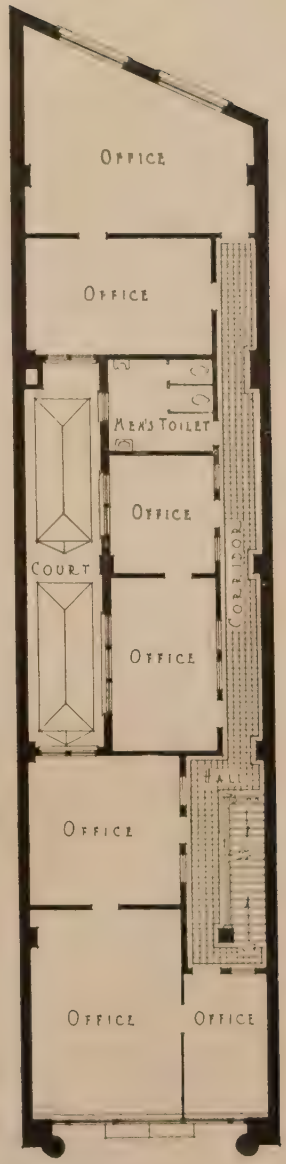
CITIZENS SAVINGS BANK, WASHINGTON, D. C.



BASEMENT PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

Appleton P. Clark, Jr., Architect.

CITIZENS NATIONAL BANK, ALTON, ILL.

The Citizens National Bank, Alton, Illinois, recently completed, is an individual building in which the installation of the foundations presented several serious constructional problems.

The site was three hundred feet from the Mississippi River at a location where the river, during flood periods, rose above the sidewalk levels. Under a portion of the foundations and touching them was a culvert six feet in diameter through which surface water from the surrounding hills drained to the river. This culvert was constructed of rubble stone laid without cement, and almost directly above it ran the double tracks of the Chicago and Alton Railroad. The constant impact of heavy railway traffic had disintegrated the walls of the culvert and in several places actually destroyed them.

Surface water, together with water escaping from the culvert, kept the soil wet at all times. In order to construct a building under these unusually difficult circumstances it was necessary to build a concrete footing for the foundations in a form which practically became a raft floating on a sea of mud. This raft of concrete, technically called a floating-mat foundation, was reinforced with steel rods, and upon it was erected the entire building.

As under flood conditions this concrete foundation-raft might be floated from its place, it was necessary to anchor the foundation-raft with a mass of concrete sixty-six feet long, six and a half feet deep, and nine feet wide, the weight of which was sufficient to hold it.

Hoggson Bros., Bank Builders.

Construction of the Small House

By H. Vandervoort Walsh

Instructor in Architecture, School of Architecture, Columbia University

ARTICLE VII

SAFEGUARDS AGAINST FIRE IN DWELLINGS

The Necessity for Safeguards

THE majority of small houses will be built of either wood-frame construction or of wood-and-masonry construction for many years to come, in spite of the propaganda favoring fireproof dwellings, for the cost of materials and labor are so adjusted that houses of this better type cannot be built by the average citizen. In fact, 90 per cent of the houses erected to-day use wooden studs and floor beams.

This method of building costs the fire-insurance companies about $60,000,000 in 1918. The actual loss must be even greater than this, for not all houses are insured.

We might as well face these facts frankly and accept the next best means of preventing this enormous annual loss of dwellings by establishing safeguards against this fire dragon at the most vulnerable parts of the building. We must place the armor of protection where it is needed most, and set up the safeguards against fire where the dangerous enemy attacks.

On examination of the insurance reports upon this question, we find that 96 per cent of all the fires originate inside of the houses. The most important cause of these fires is defective chimney construction. Bad fireplace design, careless flue construction, and poor masonry work in the chimney are responsible for many a tragic fire and a total loss of furniture, clothes, and household goods of well-meaning citizens. It is true that this is a cause of fire which may be prevented by building good chimnies and fireplaces, but there are other causes that are not so easily regulated, such as explosions from kerosene, short circuits in the electric iron or vacuum cleaner, careless throwing around of burned matches and cigarettes, and many other accidents which are bound to occur in spite of the best intentions. When such fires start, there is only one thing to do: extinguish them in the quickest possible manner. But this cannot be done easily if the walls and the floors of the house are so built that they act as hidden passages and flues for the flames to creep insidiously throughout the building, breaking out in the most unexpected places and entrapping the unwary in dangerous positions. The way that many dwellings are constructed makes it possible for a fire to start in the cellar over the smoke-pipe from the furnace, in the dead of night, creep silently through the floors and up the interior partitions to the attic and second floor, until suddenly, bursting forth in all its fury, it has the sleeping inhabitants ensnared in a box of fire that has cut off their escape. The terrible heat has eaten away the strength of the bearing partitions, the floors collapse, the stairs are encircled with a writhing flame, and smoke and fire issue from everywhere as suddenly as though they had been spontaneously produced. There is no time to fight such a fire as this; about all that can be done is to escape in safety, and then the history of such conflagrations tells of the tragic death of many children left behind in the excitement.

It is this fearful danger of the secret entrapping of fire that is possible to eliminate from the wooden house. At least we can make this demon element come out into the open, where we can see to fight him. We can set safeguards against his passage through floors and walls, up stairs, and behind wainscots. In most cases where houses are so protected a fire can be quickly extinguished by the fire department or by a chemical fire-extinguisher kept in the house.

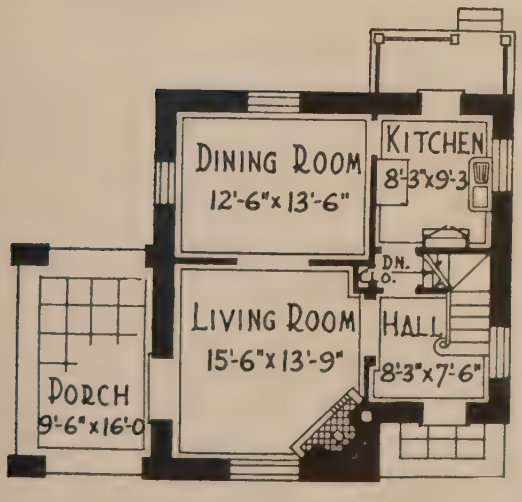
Placing of the Fire-Stops

There are two general places where these fire-stops should be constructed: in the vertical walls to cut off concealed drafts and in the horizontal floors to act as barriers between one floor and the next. A fire which starts in the cellar can be confined for some time from spreading upward if the ceiling is covered with metal lath and plaster and all the possible vertical openings in the walls are stopped with concrete, mineral wool, or other effective material. On the other hand, a fire which starts in the attic may spread to the lower stories by sparks dropping down inside of the partitions, unless they are properly fire-stopped.

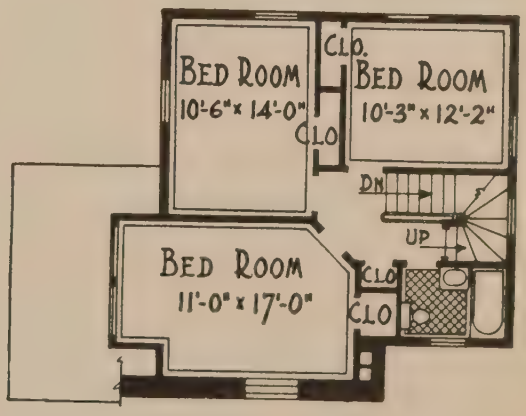
It is very important, however, to have fire-stops carefully built, for when gas is heated to the temperature of combustion it will pass through very small crevices, setting fire to the materials on the other side. It only requires a temperature of 1000° F. to ignite wood, and if the air is this hot, although it may appear harmless, it will set fire to whatever combustible material it touches. For this reason, fire-stops carelessly installed are as good as none. As an example of this, blocks of wood are sometimes used between the studs as a fire-stopping material, but, as it requires time to fit this material in place, small cracks are often left between the blocks and the studs which permit the heated gases easily to pass through them to the other side. This is also true when bricks are used for fire-stops. As the average stud is only about ⅜ inches wide, and the average brick is 4 inches, it is impossible to fill the space between the studs with bricks, laid flatwise, but they must be set on edge, leaving a wide crevice which must be filled in with mortar. This is often poorly done or omitted entirely, making the brick fire-stop inadequate.

In enumerating the places where fire-stops should be built, the most important ones appear to be the blocking of the space between the plaster and furred brick wall at each floor level and the closing of the air-space in exterior stud walls at each floor (Figs. 1, 2, 3). The filling in of the hollow space at the base of every interior stud partition is likewise necessary (Fig. 4). A wooden cornice banks up the heat from any neighboring fire, and it is advisable to fire-stop the space around the ends of the rafters where they join with the ceiling joists over the plate (Fig. 5). Where the second floor of the house projects out over the porch, it should be filled with fire-stopping material, not only for safety against fire but also to keep out the cold in the winter (Fig. 6). The pockets into which sliding doors roll should be lined with gypsum board, not only as a fire retardent but also to prevent cold drafts from coming out of these pockets (Fig. 7). The plaster should be carried down behind all

(*Continued on page 90.*)



First Floor Plan



Second Floor Plan

HOUSE, H. B. KNOX, NARBERTH, PA.

Wallace & Warner, Architects.

(*Continued from page* 88.)

wooden wainscots as a fire-stop (Fig. 8). The space between the stair carriage should also be closed at each story (Fig. 9), and all chases and ducts should be filled at each floor level. Wherever exposed pipes pass through horizontal parts of the house they should be run through sleeves. Wherever hot-air flues go from one floor to the next they should be packed around with incombustible material (Fig. 10), and all registers in floors should be insulated in the same way. The space between floor-joists and chimneys must also be filled in with fire-stopping materials.

Materials To Be Used

It is not necessary to use expensive materials for fire-stops, but they should be carefully placed. Materials like mineral wool are the best, since they expand as the wood shrinks and fill up the space. Concrete which is held in position by strips of metal lath is also excellent. The concrete or mortar used can be made from refuse material, and need not have any great strength. Old bricks are satisfactory if they are slushed into position with mortar which fills all the crevices. Gypsum blocks are good except for damp location, where they absorb moisture easily and, holding it, induce dry rot in the surrounding timbers. Asbestos board, gypsum board, and metal lath and plaster are suitable for covering large areas, such as cellar ceilings, over the boiler. In fact, fire-stopping can be cheaply done with odd and end bits of material which usually go to waste around the building.

The details of constructing these fire-stops are best shown in the illustrations, and no further descriptions will be necessary.

Chimney Construction

In view of what was said in the first part of this article, the construction of a chimney by approved methods is also a safeguard against fire. It can be considered a rule that every chimney should be lined with a terra-cotta flue, that every chimney should be an independent structure of its own, with walls thick enough for stability, capable of standing upon their own foundations and not hung from any part of the structure, that all woodwork of the building should be framed far enough from the chimney to make no contact with it, and, finally, that all the smoke-pipes which enter into the flues should be proof against leakage of flames and heat of such intensity as to cause combustion.

In the past this need of lining the flues of a chimney with terra-cotta flue tiles was not considered important, but to-day it is a well-recognized fact that no chimney is safe without this protective lining. There are many instances where chimneys are built without this lining and show no fire dangers, but the action of flue gases is slow and sure, and the mortar is attacked gradually, with the resulting disintegration of the brickwork, through which the flames eventually find their way to the surrounding wood timbers. It is found that even where terra-cotta flue linings are used the hot gases from the burning of natural gas as a fuel break down their resistance and they crumble, so that in such cases the flue linings should be made of fire-clays. From practical experience the minimum thickness allowable for any of these flue linings should be 1 inch, and the joints should not be made with collars.

When setting these linings they should be laid in cement mortar, not in lime mortar, for this disintegrates under the action of gases from burning wood. The joints should be struck smooth on the inside, and the space between the lining and the brickwork filled in solid with mortar. Wherever two flue linings are run within the same chimney space, the joints should be staggered or offset at least 6 inches. Two linings, however, in one chimney space should be the maximum number permitted. Where more are required, each group of two should be separated by brick walls of at least 4 inches which are well bonded into the outside walls of the chimney. This is in order to give stability to the chimney and also prevent any fires in one flue spreading to others. The thickness of outside walls of the chimney around the flues should not be less than 4 inches if built of brick or reinforced concrete, but if built of stone they should be 8 inches. Wherever there is no flue lining of terra-cotta, such as in the smoke-chamber, the thickness of the masonry from the interior to the exterior should never be less than 8 inches.

If chimneys are built of reinforced concrete, the reinforcements should be run in both directions to prevent cracks during the setting of the cement or from temperature stresses. Where concrete blocks are used, reinforcements should run continuously around the blocks, and the shell of the blocks should not be less than 4 inches thick.

Wherever the walls of dwellings are of brick and 12 or more inches thick, they may be used to contain chimney-flues. If it is necessary to corbel out the flues from the wall, they should not extend farther than 4 inches from the face of the wall, and the corbelling should not be done with less than five courses of bricks.

Next in importance to the correct lining of flues is the proper construction of the foundation under chimneys. There are often cases where it is necessary to cut off the chimneys below in part or in whole to supply room on the first floor. This should be avoided as much as possible, but if it cannot be done it should be supported by steelwork from the ground up.

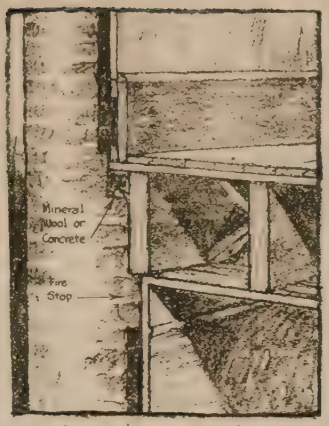
Another mistake that is continually made is to cut off the chimney at too low a level and cap it with only a plastering of mortar. All chimneys should be carried at least 3 feet above flat roofs and 2 feet above the ridge of a peak roof and properly capped with stone, terra-cotta, or concrete. If they are not capped, and the bricks improperly tied, the mortar joints will be loosened by the action of the weather and the heat issuing from the chimney, and eventually the bricks will be moved from their position, leaving the top in a dilapidated condition.

This extension of the chimney through the roof leaves a joint which must be covered with flashing to prevent leaking. The usual method of building a tin-covered cricket behind the chimney, and protecting the other sides with tin flashing counterflashed is very satisfactory; but the practice of corbelling the brickwork out over the roof, in order to cover over the joint, is extremely bad practice. When a chimney built in this way settles, the corbelled-out parts catch on the roof, and the whole top of the chimney is lifted off, leaving a crack through which the hot gases pass to the wooden rafters.

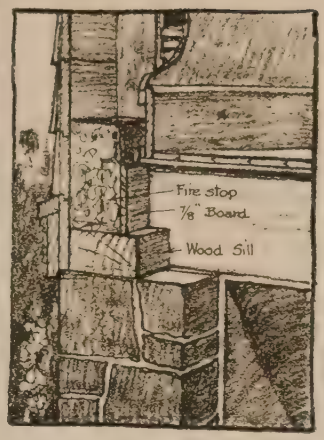
If there are any fireplaces to be built in the chimney the walls should never be less than 8 inches thick around them. It is best to line them with fire-brick of at least 2 inches in thickness. Hearths should extend in front of the fireplace at least 20 inches to prevent sparks from falling on the wooden floors. These hearths should be supported upon trimmer arches or be constructed of reinforced concrete. It is important to keep the woodwork of any mantel away from the opening at the top at least 12 inches and at the sides at least 8 inches.

In fact, no woodwork should be permitted to come in contact with any part of the chimney. Wooden beams and joists should be kept at least 2 inches from the chimney and at least 4 inches from the back of any fireplace. This space,

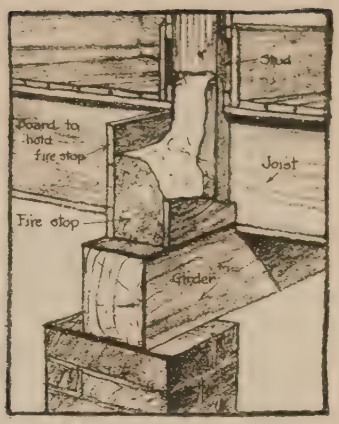
Fire stopping of furred off space in brick wall
Fig 1.



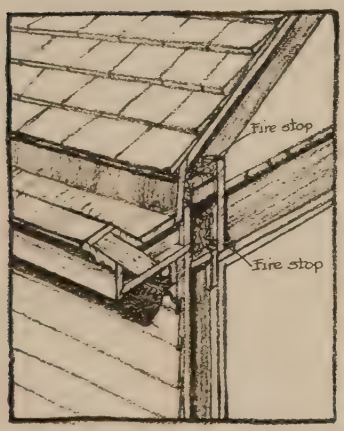
Fire stopping of furred off space in brick wall
Fig 2



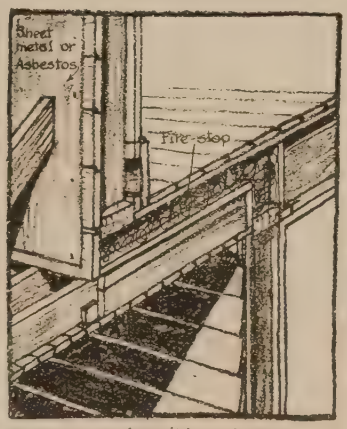
Fire stop at base of exterior stud wall
Fig 3



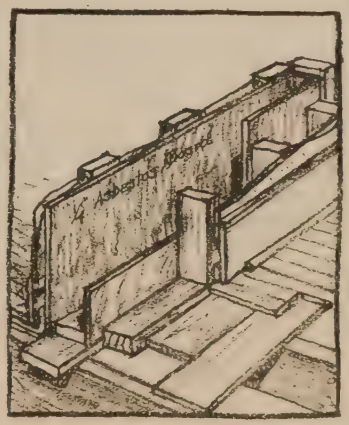
Fire stop for interior bearing partition of studs.
Fig. 4



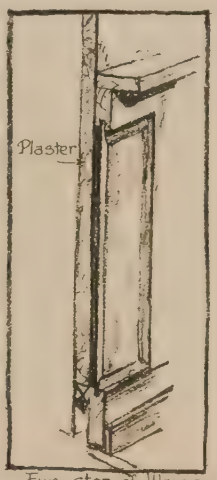
Fire stop at end of rafters
Fig 5



Fire stop in ceiling of porch roof where 2nd floor projects over.
Fig 6



Fire-stop of sliding door
Fig 7



Fire-stop of Wainscot
Fig 8

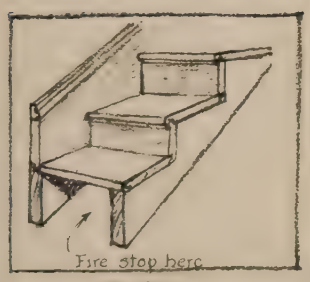


Fig 9

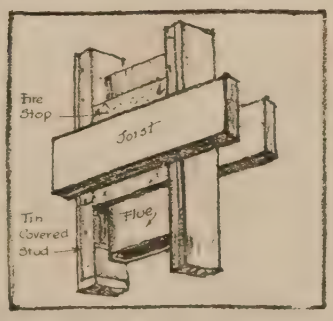


Fig 10

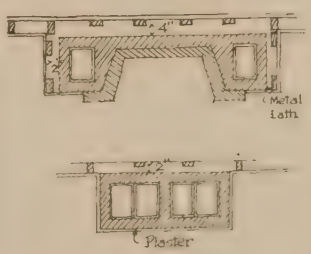


Fig 11

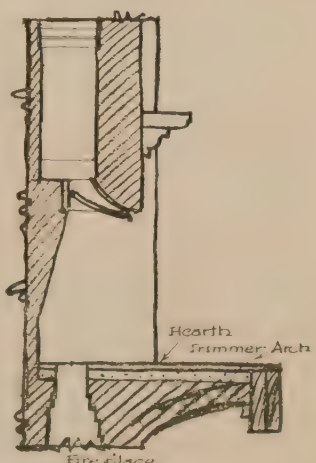


Fig 12

This business of setting up fire-stops when the house is being constructed should be known by every architect. The closing of the passage between the plaster, furring strips, and masonry wall, the blocking of continuous ways through exterior stud walls and interior bearing partitions, the filling in of the hollow spaces behind wainscots, the protecting of the underside of stairs, and many other precautions can be provided for in the plans and specifications without adding much to the expense.

as was previously stated, should be filled in with fire-stopping material. Where a chimney is on the line with a wooden stud partition, it is better to plaster directly over the brickwork of the chimney than to carry studs over it on which lath and plaster is constructed. By using metal lath over the brickwork the danger of cracks can be eliminated. Where a baseboard must be carried along this wall in which such a chimney occurs, the plaster should be carried down behind it and then asbestos board should be placed behind the baseboard to prevent too much heat coming in contact with it.

If these precautions are taken in the construction of the chimney and the correct methods of fire-stopping employed, the house of wood can be made less of a fire-trap than it is to-day. None of these devices require much additional expense, and should, on this basis, have a broad appeal.

The Use of the Order in Modern Architecture

By Egerton Swartwout

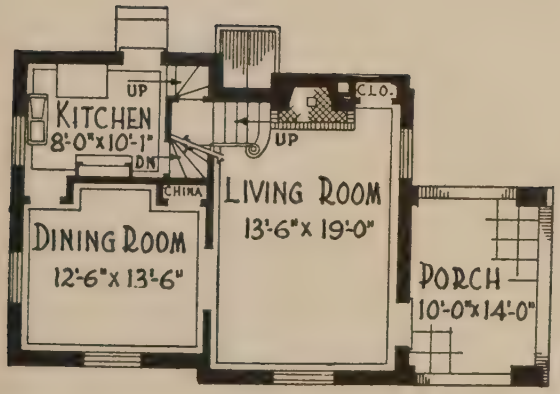
THIRD ARTICLE

THE IONIC ORDER

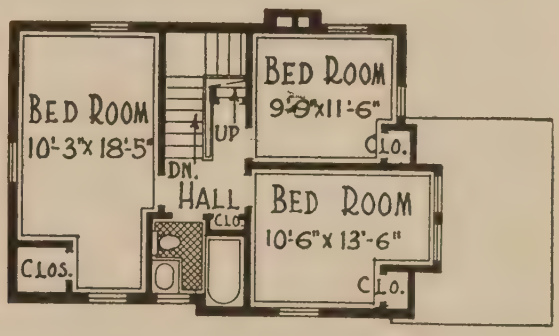
IT has been stated in a previous article that an order is a decorated means of support. Considered as such, and with particular reference to the function of the cap, there are but two divisions of the orders: the structural, represented in its simplest form by the Doric and in its decorated form by the Corinthian; and the unstructural, the Ionic. In the structural the column terminates in a block or abacus which may be square, as in the Doric; or more gracefully shaped, as in the Corinthian. The transition between the abacus and the shaft, between the square and the round, is made by the simple echinus in the Doric and by a decorated bell-shaped form in the Corinthian. The principle, however, is the same, and seen in perspective the effect is strikingly similar in outline, particularly if you compare the Roman Doric with some simple Corinthian form. In the Ionic, the unstructural, the block on top of the column is the main feature of the order; the corners of this block have been rounded and have taken the form of volutes, and because of the projection of these volutes, the cap is not square or four-sided, as in the other orders, but is rectangular and two-sided: the echinus is relatively smaller and is largely hidden by the volutes. The whole cap is unstructural; it is mere decoration, but artistically it is beautiful.

As its name implies, its origin is Asiatic, but, like the Doric, it reached its apogee in Greece, although there it never displaced the Doric in general favor, and, in fact, was only used in smaller and more intimate work, or for interiors. Nor was its use traditional or of long duration on Greece. It was first used as an already perfected order in the little temple in the Ilissus and in the Nike Apteros temple on the Acropolis at Athens. In a few years it attained its perfection in two quite different forms on this same acropolis, the simple but magnificent interior order of the Propylæa and the exquisitely decorated order of the Erechtheion. Shortly afterward an entirely different variant of the Ionic was developed in the interior order of the temple at Phigalia or Bassæ, a most curious and interesting example of a four-sided cap. There are also very highly developed orders in Asia Minor at Priene, Halicarnassus, and elsewhere. In Rome, although the order was used frequently, it never attained the popularity of the Corinthian. Its use in both countries was probably limited by the fact that it was not a four-sided cap, and therefore could not be used in its regular form at the corner of a portico or temple, and it is this very fact which limits the use of the order in modern times. In the Erechtheion it was so used, and also probably in the mausoleum of Halicarnassus and in other temples in Asia Minor, but the corner cap was merely an expedient and not a fortunate one. Evidently the Attic Greeks so considered it, for the experiment was not repeated. In Renaissance and modern times it has been used very successfully in porticos of only one range of columns; in these cases, as there is no return on the flanks, the two-sided cap is satisfactory enough for the corner; and, of course, for a portico in antis it is eminently satisfactory.

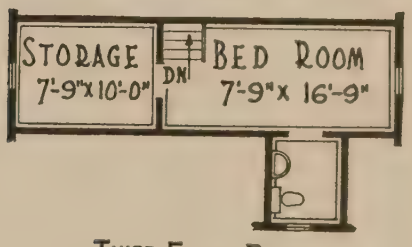
In the adaptation of this order to modern use, the principles heretofore outlined are generally to be recognized. Particular attention must be given to the size of the prototype and to the material of which the order is to be constructed. As to size, the little order of Nike Apteros is only about 13 feet high; this accounts for the proportionately excessive size of the volutes and for a certain clumsiness of proportion which would be most objectionable in a larger order. The two orders of the Erechtheion are only 22 and 24.5 feet high respectively, the measurements given being in all cases column heights. The Erechtheion order is, therefore, relatively small and is extremely delicate in detail; in fact, the detail is only adapted to marble, and the effect becomes grotesque where the same is attempted in granite with a column height of 40 feet. Such a thing has been done, and done more than once. In fact, this order is one which I think we should never attempt to copy. It is such an exotic thing, so typically Greek in feeling, so delicate in detail, that it does not seem to be appropriate to our times nor to our method of work; and yet, curiously enough, it seems to have been one of the most popular. On every side and in all materials and of all sizes it can be seen. Its sudden development in Greece presents one of the most fruitful fields for architectural speculation that I know. It shows the wonderful ability of the Greek artist in a way that not even the sculptures of the Parthenon can equal. The Greek architect has for centuries been developing one order: the Doric. He had greatly improved it, he had even perfected it, but after all it was a very gradual development, and practically a development of an order; the plan and arrangement of the temple itself had not been materially altered. But suddenly Mnesicles abandoned all tradition and built the Erechtheion on an entirely new plan and with an order new to Greece. The man actually invented a new style overnight, as it were. And yet I wonder if the development was so sudden after all. The architect had undoubtedly travelled in Asia Minor and had seen the Ionic examples over there; he was familiar with the Ilissus and the Nike Apteros temples; he had probably long studied the anthemion ornament in its painted form in Greece and in the carvings of Asia Minor, and had, undoubtedly, made careful



First Floor Plan



Second Floor Plan



Third Floor Plan

HOUSE, MRS. RENEE C. BARRIE, NARBERTH, PA. Wallace & Warner, Architects.

studies of the order long before he had an opportunity to use it. The plan is so radically different from any existing temple that it must have been dictated by the priests and is entirely fortuitous. In all probability the temple does not exist in what was intended to be its ultimate form. In any event, it was a remarkable production, and as an order as remarkable as that of the Parthenon.

I have said that I don't think it æsthetically adaptable to modern work. Practically, its adaptation is even more difficult. I don't mean that modern carvers with the aid of the pneumatic tool cannot equal the mechanical perfection of the ornament. It can be done, but the spirit would be lacking. It seems almost impossible to reproduce the spirit and character of Greek ornament nowadays; the result is always hard and wiry. The Greek work was formal but very free, and this freedom was undoubtedly the result of the employment of enthusiastic and highly skilled workmen, who were not copying by the yard ornament designed fifteen hundred years ago, but were doing something new and original, and who were as much interested in the anthemion they were carving as Phidias himself was in the carving of the chyselphantine statue of Zeus. They were also well paid for their work. Records that have been found prove that as much was paid for the carving of a running foot of egg-and-dart moulding as for one of the figures in the metopes. I have often thought that the reason for the hard wiry feeling in modern reproductions of Greek detail was largely due to the fact that most of the reproductions of classic work were done in line. Line-drawings are interesting and present the detail clearly, but they do not represent it correctly in most cases, and they entirely fail to give the spirit and character of the original. Even the carefully rendered French restorations are nothing more than line-drawings drawn at a large scale and with mathematically cast shadows. It is all hard, hard as nails, and the original was not. Greek detail should be studied from casts and from photographs, and directly in the clay, not on paper. From the casts, or even from photographs, an idea can be obtained of the character, of the projection, of the sections, and the sweep of the curves that can never be gotten from the line productions.

But to return to the Erechtheion order. As I have said, I don't think it should be reproduced, or rather its reproduction attempted, but still such an attempt will often be made, and, if so, careful consideration should be given to the fact that the order as it stands is a most carefully studied whole; every proportion, every piece of the detail, has its use and plays its part in the design of the entire order. It will not do to use the cap with a plain shaft, or with a shaft that has not the deep fluting and narrow arris of the original. Even the curious rounded fillet over the top of the flutes must be retained or some other means adopted to bring the plain surface of the shaft between the tops of the flutes into scale with the detail of the cap. The ornaments in the mouldings are architecturally necessary, and the sculpture in the frieze is an important feature, or rather it is the most important feature in the entire entablature. It should be remembered that in Greek architecture the frieze was always the principal element of the entablature, just as the cornice was in Rome, and the Erechtheion order without a sculptured frieze is like an otherwise well-dressed man without a necktie. In the Greek order the effect was intensified by contrast; the sculpture was in white marble on a background of bluish-gray Eleusinian stone. The cornice was small and thin, a mere shelf of marble, with a simple bed mould which, on account of the undercutting of the soffit of the cornice, is scarcely visible in direct elevation. The cornice counted to a great extent with the marble roof, as in the Doric temples, and is not enough of a crowning feature when used alone; the Greeks added a cymatium where it was used on a gable. It never, by any possibility, should be used as a string-course.

There is in the Lateran Museum a cap which is interesting to compare with the Erechtheion cap; there is a certain similarity in scheme in that both have neckings decorated with an anthemion motive, but the detail in the Lateran cap is as distinctly Roman and florid as the other is delicate and Greek. In some ways the Roman example is fully as interesting as the Greek, and is certainly more adapted to modern work.

Of the simpler form of cap there are many examples, the best Greek cap probably being that of the Propylæa at Athens. The cap of the mausoleum of Halicarnassus is also good, and interesting examples are found in the temple of Athene Polias at Priene, Apollo Didymeus at Miletus, and Diana at Ephesus. These orders are larger than the Erechtheion. The Propylæa order is over 33 feet and that of the temple at Priene is 39 feet high. While the caps themselves of these latter Ionian examples are good, the relation between the cap and the shaft is not always happy; in point of fact it is this relation of cap and shaft which is the main feature of the Ionic order. There is, of course, no absolute rule of proportion governing this relation. It varies in all examples and is a matter of design solely, and should be studied as such. The projection of the volutes varies with the actual size of the order, the material and character of the cap, and the proportion of the shaft, and in this most important feature the plates in the books must be followed with caution. Most of these plates do not show the entire order, or if they do it is at a very reduced scale, too small to measure accurately. Usually, the cap only is shown, generally with modular dimensions, while there is nothing to show the dimensions or proportions of the shaft. It often happens that a cap is detailed directly from these modular dimensions and placed upon a shaft entirely different in proportion to the shaft of the prototype.

As to the proportion of the shaft itself there is, of course, no definite rule. Vignola puts it at 9 diameters high, perhaps basing this on the proportion of the order of the theatre of Marcellus, but this is the only classic order which has this proportion. The small order of Nike Apteros is only 7.7 high, while the Erechtheion, also a small order, is much more slender, reaching a proportion of 9⅛ to 9½. The Ionian orders are also thin, being somewhat over 9, and this slenderness is rendered more apparent by the relatively small size of the cap, the volutes of which are much too small for the column. The Attic Greeks undoubtedly felt this, for in their first orders, the Ilissus and Nike Apteros, the columns were very sturdy and the volutes large. When the Erechtheion was built there was an evident desire for a more graceful column, and they made the proportion even greater than in the Ionian examples, but increased the size of the volutes and added the necking. A comparison of the Ionian orders and that of the Erechtheion shows clearly the superior ability of the Attic Greeks. The Roman orders, as might be expected, are generally more sturdy than the Greek, being 9 or a trifle under. The entasis is very slight in the Greek work and greater in the Roman. It is a question of taste and design, but in no case should it be noticeable. The entasis should be a slight curve beyond a straight line connecting the lower and upper diameters. There is no reason whatever for considering the lower third of the column as vertical, as is sometimes done in books of reference. It is true that the curve of the entasis beyond the straight line of the diminution approaches the vertical, but it is not actually vertical in any case; it is a continuous curve.

As to the proportions of the cap, the size and projections of the volutes, etc., I would refer you to the various types shown in the books, but in following any of these examples, the size and proportion of the shaft, as well as the material, should be carefully considered; in fact, the only common-sense way to determine the size of the cap and the projection of the volutes is to study the entire order, particularly the shaft cap and base, at a large scale in silhouette. Three-quarter scale is generally large enough; the background can be blocked in, or the column itself can be darkened; the latter scheme is perhaps better and is certainly easier, but any scheme will do that will enable the silhouette to count when the drawing is placed upright. A number of studies should be made and the one that seems the most satisfactory should be modelled in plaster. No detail need be shown on the model, except that the sides of the volutes should be cut away approximately as they should be, otherwise the effect of a quartering view will be lost. This model must be absolutely accurate, however, otherwise it will be worse than useless. A study of this model may suggest further changes in proportion and the whole thing may have to be done over, but when the model is finally satisfactory the dimensions thus found can be followed with confidence both in the details and in the full-size model. I am emphasizing this point because I am convinced that in no other way can a satisfactory proportion be obtained. A cap merely taken straight from the book and modelled full size may come out very well indeed, but if it does it is purely by accident, and not because of any skill or care on the part of the architect.

When once the size and the projection of the volutes is determined the detail can be put in according to the design adopted. There is no absolute rule of proportion or treatment. There are a few points, however, that should be borne in mind: the abacus is generally square, and its size depends chiefly on its projection from the line of the volutes on the front of the cap. If the volutes have an excessive sideways spread there is no reason why the abacus should not be slightly rectangular, provided always that the cap is not on a corner column. Again, the echinus, which is usually ornamented with an egg-and-dart motive, should not be entirely lost under the side-cushions; a portion at least of this moulding should be distinctly visible for the entire circumference of the cap, as well as the fillet or bead and real mould below it. These mouldings fulfil the function of the echinus of the Doric cap, and unless they are well in evidence the transition between the column and the abacus will not be sufficiently marked. I have seen examples in which the overhang of the side-cushions completely obscured these mouldings, and the effect was distinctly bad. And, again, in some examples the section through the centre of the side-cushion is finished at the top with a reverse curve. If this is done, care should be taken that there is no hollow in the curve, but that the entire curve is completely visible when seen from below. The volutes themselves can be laid out mathematically by compass; there are several methods which are more or less clearly shown in the restorations. I have found it good practice to lay these out carefully full size rather than to rely on the modeller's working it out freely in the model. There is nothing in the world harder to model than a volute, and a better result can be obtained if the outline of the carefully laid out volute is pounced on a flat piece of plaster which will form the basis on which the mouldings of the volute can be modelled in clay.

As to the relation of the lower architrave face, it generally comes over the upper face of the column, and in the case of a pilaster generally over the pilaster face or a very little beyond it if volutes are used on the pilaster. If, on the contrary, a moulded anta cap is used, the relation is the same as already described for the Doric order: in all cases in advance of the pilaster face. The frieze should always be slightly in advance of the lower architrave face, in order to follow the line of support as heretofore explained, and I would again emphasize the fact that when a plain frieze face is shown in the restoration of the Erechtheion and temple of Nike Apteros, it is the background of the applied sculpture, and its location should not be followed if the sculpture is omitted. A pleasing effect can be obtained in the case of a plain frieze if the frieze is given a slightly outward inclination. In the case of a sculptured or ornamental frieze, the same principles should govern the projection of this ornament or sculpture as have been hereinbefore stated. This is particularly the case in the treatment of the corner.

The cornice is differently treated in the Ionian and in the Attic Greek orders. In the latter the cornice consisted merely of the corona and bed mould with a cymatium added on the gable. The Ionian examples always employed dentils. These are strongly reminiscent of the beam ends of primitive construction, even in the later work retaining the excessive projection so typical of wooden construction. In point of fact, there is evidence to warrant the belief that in most of the Ionian orders the primitive construction was so closely followed that the entablature consisted merely of a stepped architrave, reminiscent of the beam over the columns, directly crowned by the beam ends and gutter expressed in stone by the dentils and corona; there was probably no frieze. In most Renaissance and modern work the dentils are retained as well as the frieze, and the cornice has more of the importance and character of the Roman cornice than the thin, shelf-like corona of the Greeks.

There were, as I have said, examples of four-sided caps, the most notable in Greece being the interior order of the temple of Apollo at Bassæ. The interior arrangement of this temple is quite different from the normal, although it is but little later than the Parthenon and is attributed to the same architect, Ictinus. The order is engaged, or rather forms the termination of short wing-walls which project into the cella. The volute, therefore, is free standing in the front but flat against the wing-walls on the side. Its peculiarity is the large size of the volutes and their great downward sweep. The effect was undoubtedly fine in the location for which they were designed, but the cap is not adaptable to a free-standing order. In the few instances where it has been used, the effect is clumsy in the extreme. It is, however, very appropriate for a small metal cap; in fact, it would seem as if the original was adapted from a metal form. There are some charming examples of small four-sided caps in Pompeii which are very Greek in feeling, and there are various specimens to be found in Roman work, the latter forming the prototype of our well-known Colonial caps. These four-sided caps are interesting but are adaptable only to smaller work; the effect is not monumental or simple enough for a large portico. In a pilaster cap the effect is better, particularly if the pilaster has a strong projection; in point of fact, the straight cap does not look well on a heavily projecting pilaster, as the side of the cap is too much in evidence and is difficult of adjustment.

In connection with the detail of the four-sided column cap it is well to remember that as the volutes are on the diagonals, the projection of the volute has to be considerable to show a proper projection in direct elevation. An examination of the best examples, particularly in Georgian or Colonial work, will show a surprising projection on the diagonal.

(*To be continued.*)

Reinsurance Building, New Rochelle, N. Y.

Geo. B. Post & Sons, Architects

EXTREME advances in rentals for commercial as well as residential space in buildings in New York City—amounting in many cases to double or triple the rentals charged a few years ago—is an aftermath of the war growing out of increased business and population, plus a practical stoppage of speculative building in the metropolis. Rent-raising has driven hundreds of business concerns from tenant occupancy to landlordship. Old properties have been bought, especially in lower Manhattan, and remodelled for business use, or sites have been acquired and new buildings erected—some of the sky-scraper type. Some business or light manufacturing concerns have even gone further than this, and moved away from the congested sections of the city, shaking off the dust of the streets, as it were, and built for themselves new homes in outlying boroughs or suburban communities, where good transportation is provided, land is cheap, and good air and sunlight abound.

Detail.

The Reinsurance Clearing-House, for many years a tenant of one of the down-town commercial buildings, is in the last category. It has moved its entire organization and equipment to a new building planned by Geo. B. Post & Sons and recently completed in record time at New Rochelle, seventeen miles from 42d Street. Located on a corner plot at Beauchamp Place and Maple Avenue, in a quiet residential section of the city, away from noise and bustle, the new building affords an unusually attractive and commodious centre for the transaction of business. As the name implies, the building provides a centre for the handling of reinsurance business for a large number of allied fire-insurance companies. The nature of the work is such that it can be best handled in a general workroom where stenographers and typists are all grouped together under the supervision of a director. A considerable amount of filing space is required, within easy access of the main room.

To meet these conditions the building—designed of a one-story-and-basement type—provides on the first floor nearly 5,000 square feet of clear space for the staff and over 5,000 square feet of well-lighted storage and filing space in the basement. Two small rooms on the main floor are also provided.

The main floor and basement are flooded by light and air from spacious windows on all sides. As the building plot is sufficiently ample, setbacks of the building have been arranged assuring protection of light and air in the future against encroachments of buildings on adjacent plots.

One of the conditions under which the commission was awarded to the architects was that occupancy should be given in a fixed time and at the expiration of leases on the down-town New York quarters. The problem therefore was not so much a question of plan and design as of rapidity in construction and the elimination of detail requiring time for its execution. The exterior of the building was designed in a plain but dignified treatment, with an accenting of the principal entrance, which overlooks the greensward on the main street frontage of the plot.

The drawings had to be revised from time to time in the course of preparation to produce a result that would lend itself to rapid construction. Foundations are of concrete, and walls of hollow tile and magnesite stucco. Candelabra and all sculptural details about the entrance are done in cast stone.

The contract was awarded to the Turner Construction Company in the midst of a winter season that was one of the worst experienced in this part of the country in many years. Rock was encountered within two feet of the surface and, due to this, scheduled progress was greatly hampered, but through foresight in the purchase of materials and the use of an organization thoroughly experienced in the use of concrete as a medium of building construction, rapid progress was made, and occupancy was given to the owners on May 1, only eight weeks from the starting of the foundations.

The grounds have been tastefully planted, and the building and its setting blend happily with an environment of modest suburban homes and gardens.

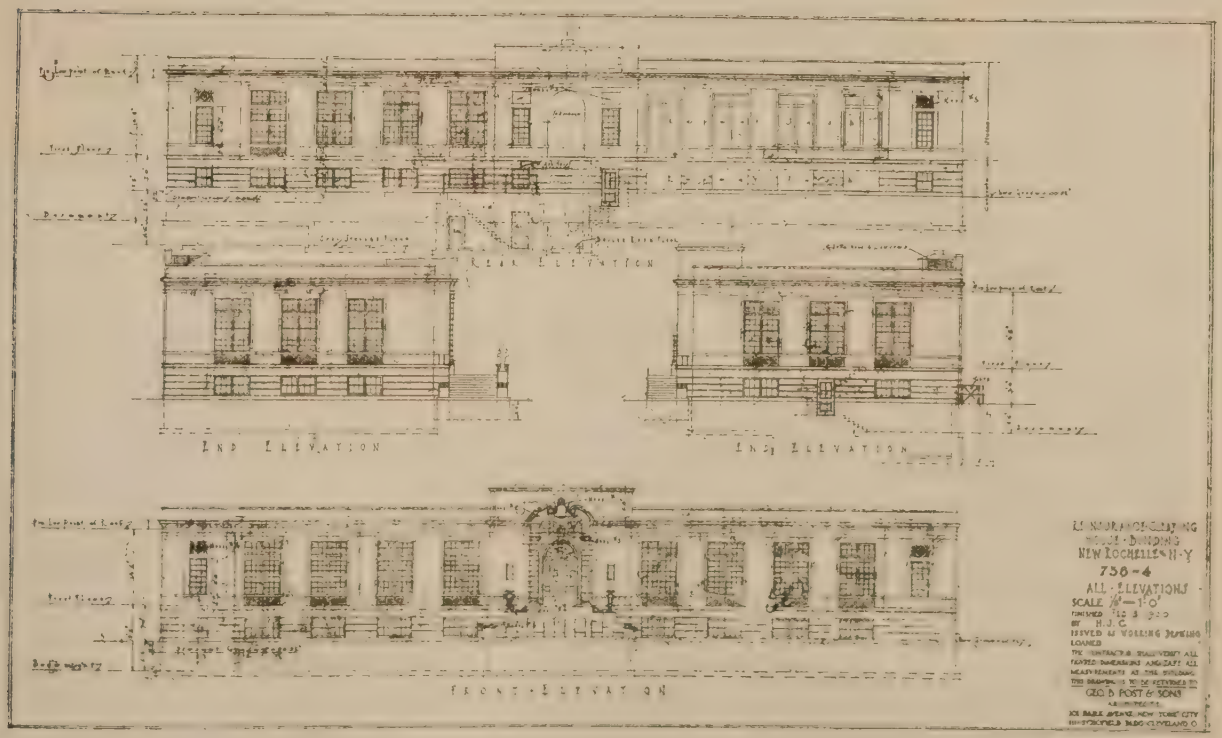
The Influence of American Architecture in Canada

THE architectural tendency of the Dominion is obviously and naturally that of her great neighbor, the United States, where, within recent years, the monumental manner has received fullest and finest expression. Canadian talent has been considerably augmented by intercourse with the States, and direct influence has been exercised by numbers of American architects who, realizing the opportunities afforded by the Dominion, have migrated to Canada and set up in permanent practice there. That Canadian architecture, though quite capable of looking after itself, must be substantially and permanently benefited by the leaven thus afforded is obvious; for the Americans bring with them a new and definite tradition, a freshness of outlook, an ordered and dignified theory of architectural design—all, no doubt, the ultimate result of Beaux-Arts methods, which have won the suffrages of American architects to the almost total exclusion of all others.

The Architectural Review, London.

$5,000,000 Given for Chicago House Loans—Metropolitan Life Leads Plan for Relief

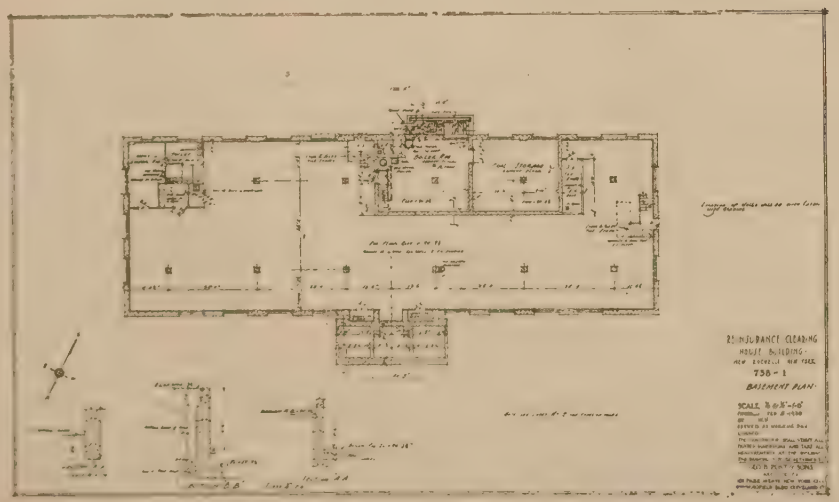
DECISIVE steps to provide measures to relieve the housing situation in Chicago were taken recently at a conference at the Chicago Real Estate Board. It was announced by the Chicago Trust Company that the Metropolitan Life Insurance Company has appropriated $5,000,000 for loans on new homes and apartment buildings.



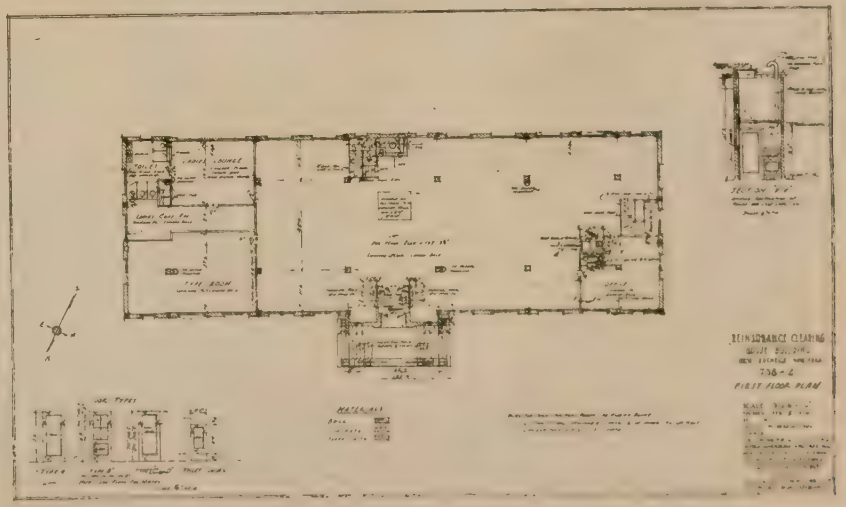
REINSURANCE CLEARING-HOUSE BUILDING, NEW ROCHELLE, N. Y. Geo. B. Post & Sons, Architects.

REAR OF BUILDING.

INTERIOR.



REINSURANCE CLEARING-HOUSE BUILDING, NEW ROCHELLE, N. Y.

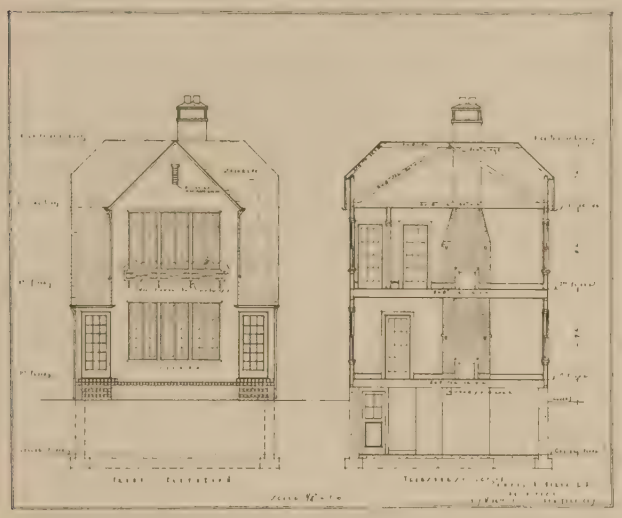


Geo. B. Post & Sons, Architects.

The Economical Two-Family House

Samuel A. Hertz, Architect

IN view of the shortage of homes, which has been prevalent for an extended period, I have sought to work out a plan for an economical two-family house designed in the English Colonial style, adapted particularly to the restricted sections of the residential suburbs. The dimensions of the house are 20 feet 10 inches by 47 feet 10 inches in depth.



In this plan there is an open terrace with brick steps at both ends, enabling each family to enter its floor in privacy.

Both floors contain five rooms and bath as well as a combination sun-parlor and sleeping-porch facing the front. This should prove an asset, since such a feature has always been considered a prerequisite of a fine country home. The floors of the sleeping-porches have been laid up in red cement squares, and the rooms are heated with steam radiation, so that they may be used in the winter months as chambers; they are enclosed in the front with removable casement sash.

In planning this house the architect has had uppermost in his mind the object of providing the prospective client every convenience with which a two-family house should be equipped. The house, therefore, although of minimum dimensions, has every facility to eliminate needless waste of time and energy on the part of the housewife.

Another feature of this house is the rear staircase, which can be used jointly by both families. It has direct access to the cellar, where laundry-tubs and steam-boiler are located. This stair, which extends to both first and second floors, serves as a tradesman's entrance.

The façade of the building has been finished in pebble-dash stucco on wire lath, while the sides of the house are finished with 10-inch wood clapboards. The design of the exterior is distinctive. The roof, it will be noted, pitches toward the front on both sides of the building and extends beyond the entrance-doors approximately 30 inches, forming an overhanging cornice, which possibly may add to the appearance of the house.

A spacious living-room is entered from the main-entrance vestibule on the first floor. In this room is a fireplace laid up in tapestry brick, pointed off in white cement mortar, and furnished with a gas connection for the use of gas-logs. A coat-closet is provided on one side of the room beneath the stairs leading to the second floor. The room may be finished with a beam ceiling. From this we enter the combination sun-parlor and sleeping-porch through a pair of French casement doors, directly in the centre of the room; this feature is maintained on both floors.

The dining-room is entered from the living-room through a single French casement door, and may be finished in effect similarly to the living-room.

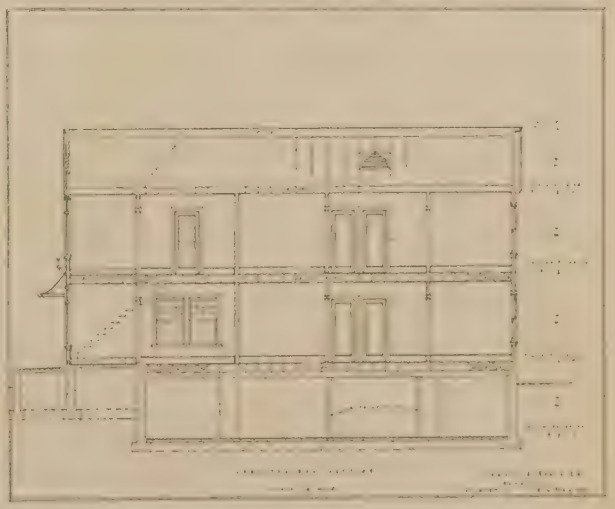
The kitchen, while occupying a minimum amount of space, allows free and easy movement, and is fitted out with all necessary equipment.

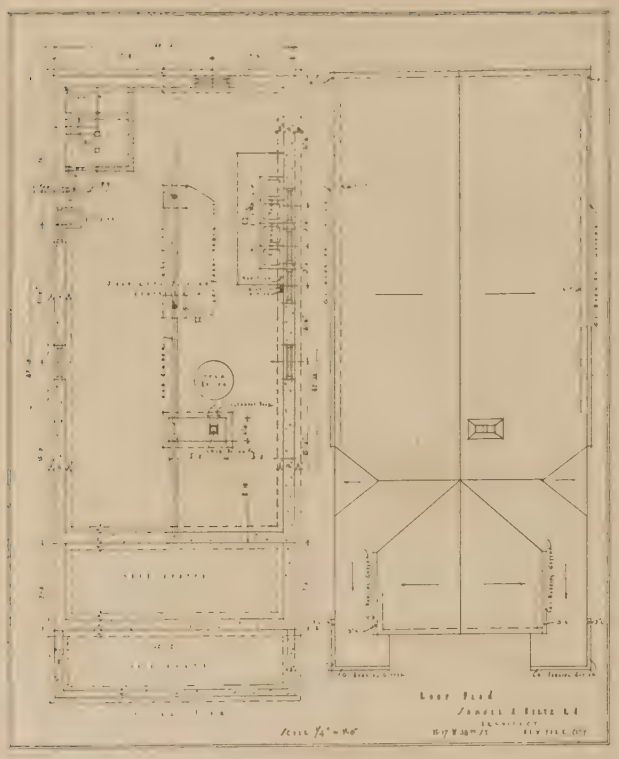
The two chambers, entirely separated from the living quarters, are entered through a private passage adjacent to the bathroom. In the chambers are large coat-closets, and a linen-closet opening directly on the private passage. Both floors are similar in plan.

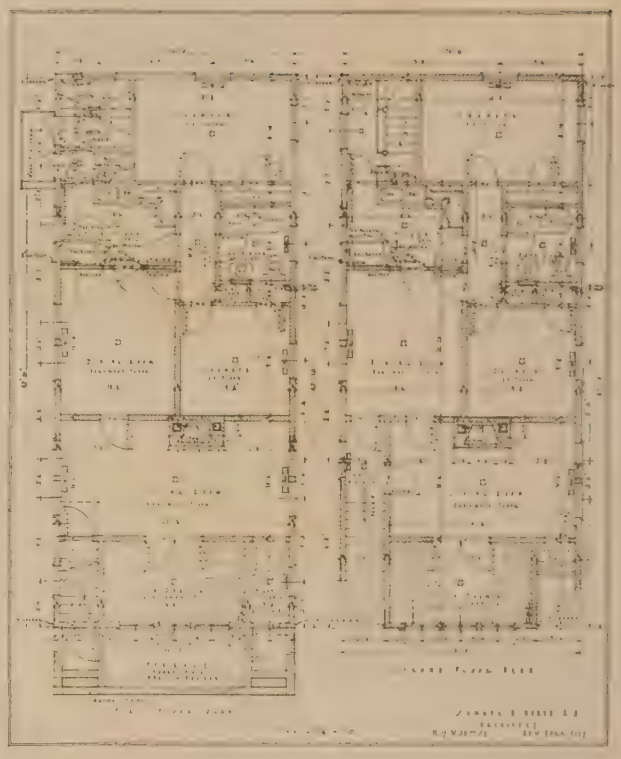
For the general specification and finish of the rooms the reader is referred to the article published in the issue of ARCHITECTURE of June, 1920, in which the architect illustrated an economical house for one family.

The approximate cost of construction, based on present prices, is $13,000.

While the cellar is an open one, and contains one steam-boiler and four laundry-tubs set on a single wood slat plat-







form for the use of both families, it may be arranged, if so desired, by properly partitioning off the cellar that each family be provided with an individual laundry, and by the installation of an additional boiler with individual boiler-rooms. This arrangement may be desirable should one family not wish to conflict with the other in the supply of heat and the use of the laundry. The cellar has a 3-inch concrete floor throughout with a 1-inch cement finish; the walls are of 12-inch concrete, properly waterproofed. The cellar also contains windows of ample size, offering plenty of light and ventilation.

An open attic is provided for storage and may be reached by both families from the rear stairs. The attic contains galvanized-iron louvres, so that proper ventilation may be afforded. The pitch of the roof is of such an angle that it will readily shed rain-water and carry off any snow that may accumulate. The roof is equipped with leaders and gutters at all desirable locations.

The house herein described can be built on a 25-foot lot. Should the owners desire to build a garage in the rear of the house, the lot would have to be proportionately larger to admit of a driveway on one side of the house. For all practical purposes a 30-foot lot would be sufficient.

An Automobile Sales and Service Building, Bridgeport, Conn.

Joseph N. Northrop, Architect

THIS building was erected for the Erwin M. Jennings Co. to accommodate a large and increasing business in sales and service of automobiles.

It occupies a site near the business centre of the city, the lot being large enough to give an 18-foot concrete driveway all around and a large parking place in the rear.

The front, and extending for two bays, or about 50 feet on each side, is faced with terra-cotta in imitation of light granite of a warm gray shade, the panels in a medium shade of blue; the base is of granite, the windows of plate glass, divided into small lights in the upper stories.

The rear part of the building and the upper stories are devoted to service, sale of used cars, storage, etc. The top floor contains repair department, machine-shop, painting and finishing shop, etc.

The construction of the building is in reinforced concrete, flat-slab system, with two-way reinforcement.

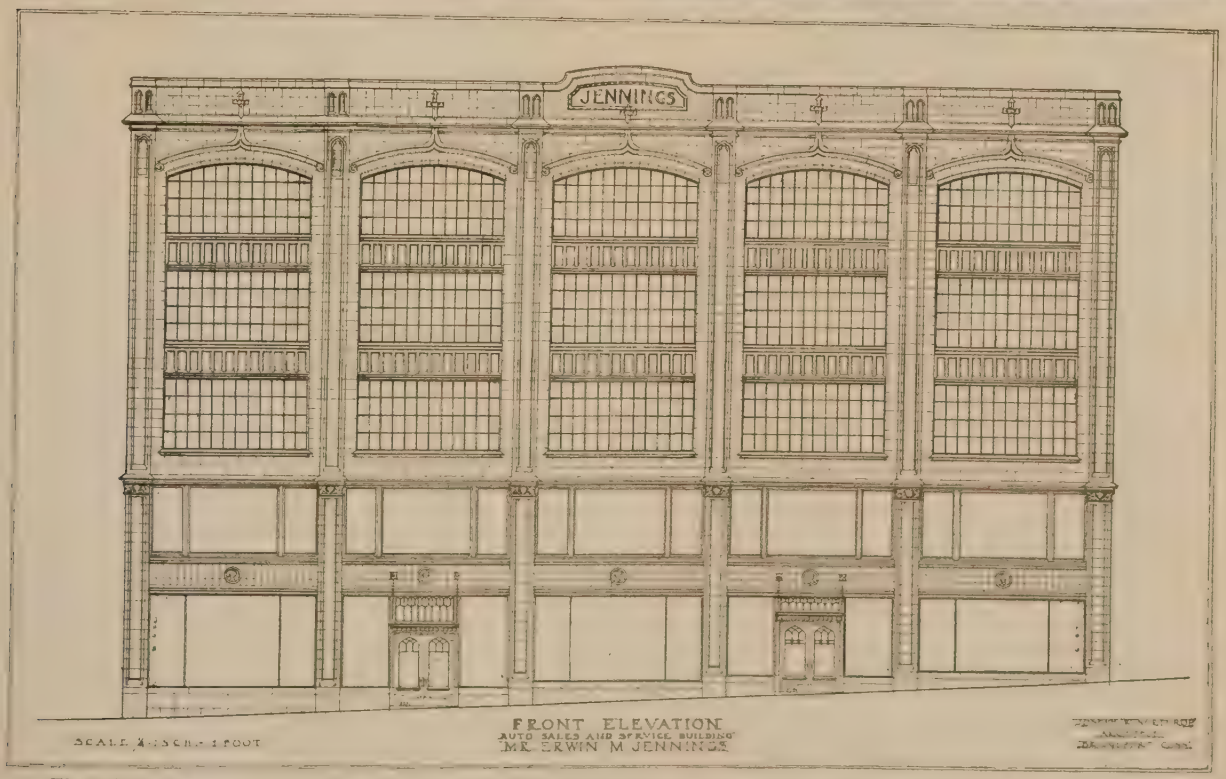
The store for the sale of accessories also has a gallery on rear and two sides, with cases for goods, manager's office, etc., in the gallery. The cases are of steel.

The front part of the store has a tile floor similar to the show-room, and the rear part and the galleries are covered with heavy linoleum cemented down.

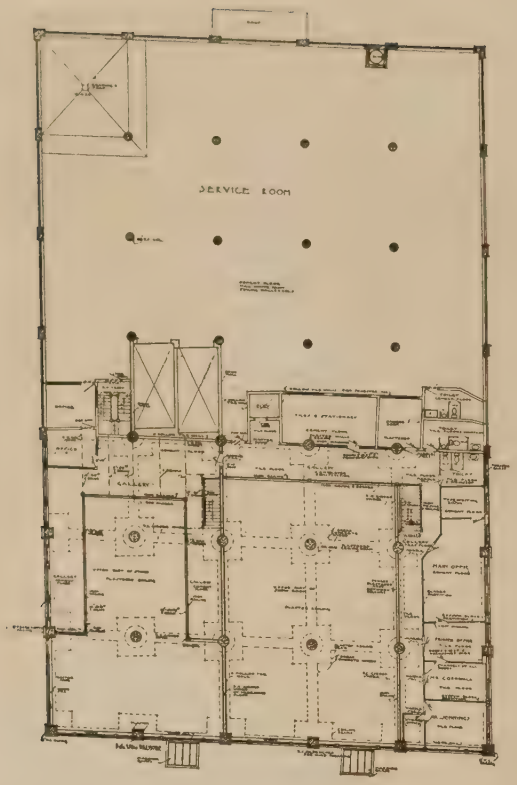
Marble stairs with wrought-iron railings lead from the store to the show-room, and wide plate-glass windows between the store and the show-room give a fine open effect.

The heat of the building is by vapor, there being two tubular boilers in the rear cellar. A large trench of sufficient size for a man to work in extends entirely around the walls of the building, the heater pipes and returns being carried in this, with risers and drips to the radiators above. The main feed rises to and along the ceiling of the fourth story, and from it the feed-lines to the various floors are taken up and down.

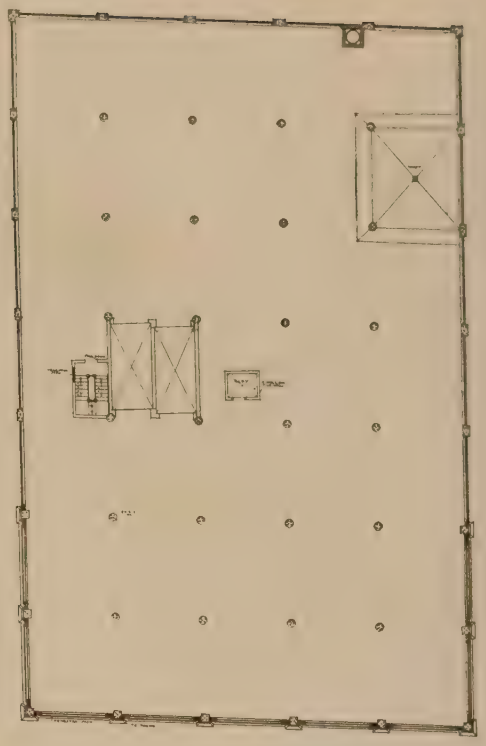
There is an independent system of pipes for the heating of show-room, store, and offices, enabling the heating of these portions at times when the remainder of the building does not require heat.



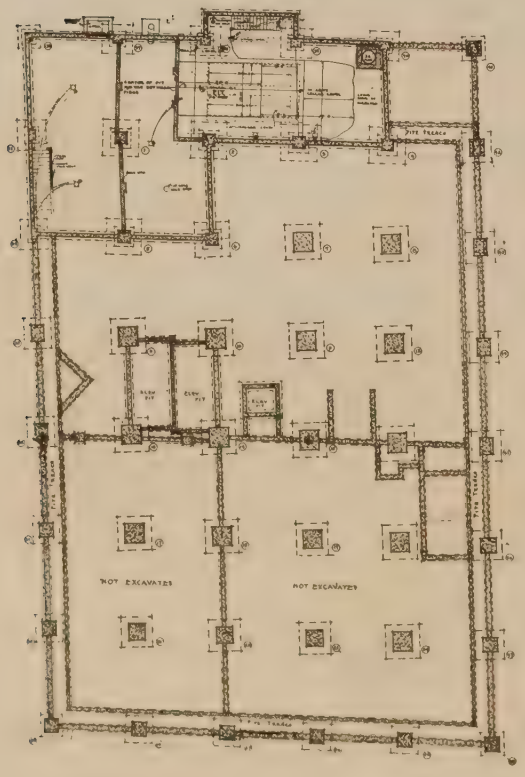
The building is 110 feet front by 170 feet deep and five stories in height, with cellar in the rear portion for heating apparatus and storage. The first story is 14 feet and the others 12 feet in height.



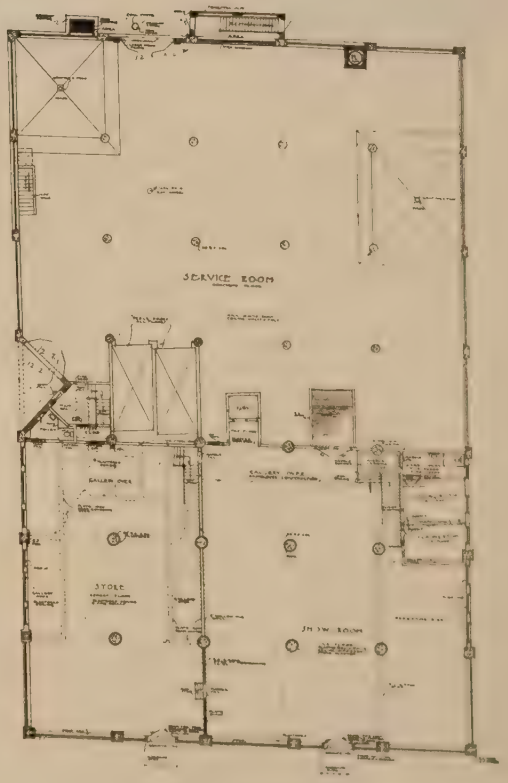
SECOND FLOOR PLAN



THIRD FLOOR PLAN

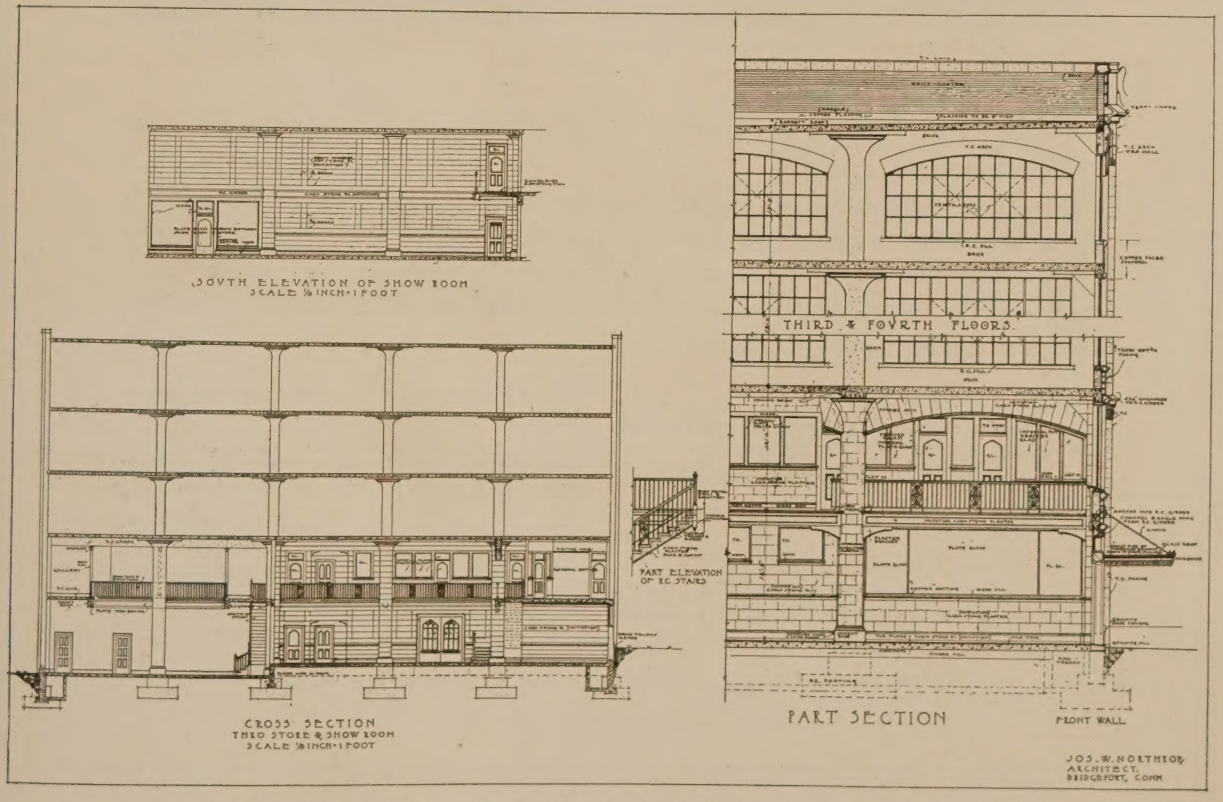


CELLAR & FOUNDATION PLAN



FIRST FLOOR PLAN
BUILDING FOR
MR ERWIN M JENNINGS
BRIDGEPORT, CONN

PLANS, AUTO SALES AND SERVICE BUILDING, ERWIN M. JENNINGS, BRIDGEPORT, CONN. Joseph W. Northrop, Architect.



The show-room, as indicated by the photographs, is a fine, simple, dignified room, the constructional features of the building naturally giving it a strong architectural effect. There is a gallery on one side and rear, the offices opening on the side-gallery.

The floor is in 12-inch squares of white and gray tiles; the walls of imitation caen stone lined off in blocks; the stairs of light marble with wrought-iron railings, which continue about the galleries.

The columns have bold moulded caps and bases. The ceiling is in large panels following the constructional lines.

POSTER FOR THE BALTIMORE CATHEDRAL

Designed by Bertram Grosvenor Goodhue.